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THE

FAMILY MAGAZINE.

VOLUME VIII.

THE

FAMILY MAGAZINE;

OR

MONTHLY ABSTRACT

OF

GENERAL KNOWLEDGE.

ILLUSTRATED WITH SEVERAL HUNDRED ENGRAVINGS.

VOLUME VIII.

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VALEDICTORY.

We admit in anticipation of the charge, that the first page of a book is a singular place for a valedictory, but in this instance, our "last speech" is so nearly allied to that nondescript genus of the literary world, called a Preface, that we can see no cogent reasons why it may not occupy the same place. A preface has always appeared to us a sort of Alpha and Omega, a first and a last, a prophecy of things already enacted; and we have frequently been lost in wonder and admiration of the great genius of the man who invented a preface. But as tastes are so various, we are sure of suiting somebody, and therefore we will proceed to indite our valedictory, without farther *preface*.

With this, the Eighth Volume, the connexion of the present publisher and editor, with the Family Magazine, ceases. It will now, either pass into other hands, or cease to exist in its present form. If the former shall be its destiny, we heartily bid it "god speed" in the good work which, for eight consecutive years it has been pursuing: if the latter, we trust we shall not be charged with egotism in saying of it, as we would of a good man as he lies down to his last rest—his career has been useful; blessings have attended his path; his works have shed the light of wisdom upon dark places; poured the oil of knowledge into the intellectual lamp of the ignorant, and many regret his departure.

From the first moment of its career till the present, we believe that no publication has issued from the press in this country which contains so much of really *useful* matter, for the same price, as the Family Magazine. While many other periodicals of the day, may justly make greater claims to literary superiority, we are confident that none have contributed so largely (considering its circulation) to popular enlightenment on useful subjects as this magazine. We do not say this in a spirit of boasting, or in the indulgence of a vain wish to trumpet our own excellence, but with a desire to express our consciousness of having carried out the original design of the work; and we would rather refer the reader of this for proof, to the work itself, than ask him to rely upon our ipse dixit. While other periodicals of greater pretensions, adorn the drawing-rooms and bordoirs of the elite, and furnish their quota of amusement and perchance instruction, for the hour, our unpretending messenger, like its prototype, the English "Penny Magazine," has carried the riches of useful knowledge to the dwellings of the more humble, enlarging their understandings; opening to them in a degree the wonders of nature, art, and mind; improving their hearts and furnishing them with aids whereby to ascend to the more elevated walks of life.

The prominent feature of every volume of the Family Magazine is UTILITY. No overwrought and falsely colored pictures of society in the form of "popular tales" have lumbered its pages, but every column, we sincerely believe, has been filled with the utile and true. We have used the utmost care in our selections of matter, both literary and graphic, and aimed at the "greatest good of the greatest number." Yet we can perceive that we have frequently fell far short of the point aimed at, and been disappointed in results. We can see our many short-comings and errors, but they have been errors of the judgment, not of the will; and we resign the magazine into other hands, with a consciousness, that, so far as our abilities have permitted, we have discharged our duty to the public and to ourselves, with fidelity.

The present publisher and editor have now had charge of the magazine, the former from its commencement, and the latter, two years; and they would here make an acknowledgement of the uniform kindness of the public and public press in general, and of several esteemed friends in particular, in giving aid and encouragement to the enterprise in which they have been engaged.

With this brief review of their labors, and the results, they bid the readers and friends of the Family Magazine, adieu!

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THE ARRIVAL OF THE ENGLISH AT ROANOKE.

THE

FAMILY MAGAZINE.

1840--41.

AMERICAN HISTORY.

THE HEROIC AGE.—No. I.

Every nation, eminent for its civilization and the true greatness arising from it, has had its heroic age—an age to which the patriot turns with the greatest reverence, and learns from the volume of its history, written or oral, the true causes of its first successful progress as a distinct empire, and the character of the men to whom it is indebted for its existence and perpetuity. The heroic age of a nation is that period when, in its weakest state as a colony, the people, led on by some daring spirit, contend manfully against all obstacles and subdue every enemy which opposes their progress. It is that age when physical and moral forces are opposed—when the national prejudices of aborigines and colonists must be assimilated if not destroyed, and when the light of civilization first essays to dispel barbarian darkness. Assyria, Egypt, Iran, Carthage, Greece, Etruria, Rome, and Briton have all had their heroic ages; and last in the catalogue is our own Republic.

Although two hundred years have not yet elapsed since the first English colony took permanent root in America, and planted that seed of civil and religious liberty which has now grown up such a noble and wide-spreading tree, yet the events of those two centuries are characterized by loftier patriotism, nobler heroism and more enduring good to mankind, present and future, than ever distinguished Rome during the thousand years from the era of Tullius, to her rapid decline.

We behold with admiration the struggles of infant Carthage, but what were they, compared to those of the weak colonies of America? We sympathize with the Moors, when, on reading the history of the past, we see them disputing, inch by inch, the soil of Granada with the barbarians, and successfully introducing civilization and refinement into western Europe; but their warfare was more equal and their resources far greater, than were the Pilgrim fathers and their contemporaries. The former were nerved for physical strife, and had powerful allies near; they were disciplined in the arts of war, and entered upon the great task of building up a new empire, with the united strength of thousands concentrated to one point. Not so the English colonists in America. They came few in number, and those few were separated from the civilized world by three thousand miles of ocean. They came almost unarmed, and reared their standard in a wilderness filled with barbarous tribes, exasperated by acts of former transient settlers, and jealous of the encroachments of those they deemed intruders. Famine, sickness, dissensions, and the conspiracies and attacks of their savage neighbors, were the obstacles which the colonists were obliged to contend with, in addition to the great labor of levelling the dense forest, constructing dwellings, tilling the soil and organizing a civil government. But all of these were overcome;—the savages were reduced to submission, towns sprang up like magic in the wilderness, and the foundation for a mighty republic, now stretching over half a continent, was laid deep and firm. To accomplish all this, required the exercise of all the nobler faculties of the human soul. It required great moral and personal courage, the zeal of benevolent patriotism of the most ardent nature, and the due exercise and control of all those passions and sentiments which impart true greatness to the character of man. This great work *was* accomplished—a new empire was formed—the *people* became a sovereignty, independent of all other nations—took their oath of allegiance to a newly formed constitution—

and, with this crowning act, ended the heroic age of America.

On the tenth day of April, 1607, three small ships, of which the largest did not exceed a hundred tons burden, entered Chesapeake bay, freighted with one hundred and five men, a small stock of provisions, and a few arms and ammunition. For four months they had been buffeting the waves of the Atlantic, and for three days previous to the time in question, they had battled with a furious storm in vain attempts to land at Roanoake where Raleigh had three times planted a colony, but with disastrous consequences. This little company of adventurers had left the endearments of home and the advantages of social life, then so great in England, to build up an empire in the new world. Others had preceded them with the same intentions and the hope of individual gain, but the weapons of the Indian, sickness and disappointment, had either destroyed them or driven them back to England, and, for a period of one hundred and ten years from the time when the shores of Virginia were discovered by Cabot, no permanent settlement had been effected till this little colony, under the command of Captain Newport, landed at the mouth of the Powhatan river.

The morning was bright and balmy when the little fleet of Newport anchored off a promontory, which, in honor of the prince of Wales he called Cape Henry. The land breeze was freighted with the rich perfumes of early spring flowers, and from the forests which fringed the shores of the bay, the melody of thousands of song-birds formed a striking contrast to the tempest which they had just experienced. Everything was inviting to the eye and ear, and for several hours these hardy adventurers strolled amid the beauties of nature in her primal attire, and for the time forgot the perils they had passed, and the greater perils yet to be encountered.

After taking in a supply of fresh water, and surprised at not meeting with any trace of human beings, Newport weighed anchor and coasted along the southern shores of the bay for about forty miles, when he entered the mouth of a large river. The beauty of the scenery, the apparent richness of the soil, and the evident security of the harbor, determined the colonists to make this the place of their abode. They gave the name of their king (James) to the river, and also to their settlement; and here was planted the first permanent English colony in America—here was erected the first town, and here of one hundred and ten men was formed that nucleus around which, for two centuries has been gathering an enlightened population with all its concomitants, until now we present a powerful nation of freemen, nearly twenty millions in number!

Among those who first landed at Jamestown, was Captain John Smith, a man eminently qualified to conduct an enterprise so great as the one in which he was engaged. He was brave, persevering, generous, clear headed and right hearted, but for the possession of these noble qualities he was looked upon with jealousy by his compatriots; and their contravention of an arrangement providing for him a seat in the colonial council, produced disastrous dissensions at the very outset of their career in the new world. It is not necessary to our purpose here to refer to the antecedent acts of the king, or to discuss questions of propriety in the formation of the colonial government; it is sufficient to remark, that the governor and council for this colony were appointed by the king, which commission was sealed and instructions given that it should not be opened till the arrival of the colony to their place of destination. This arrangement gave great dissatisfaction, and, as we have intimated, Smith was excluded from a seat in the council, and even accused of traitorous designs. The want of the counsel and action of such a man was detrimental to the public weal, and it was not long before he was called to his appointed place, after having, at his own request, submitted to the form of a trial, and been honorably acquitted.

In June, Newport sailed for England according to instructions, leaving the colonists no means of escape from the savages and disease, from both of which they suffered much before the close of the summer. Several were killed in sudden attacks from the Indians; and about the beginning of September, disease had swept away one half their number. Among these was Bartholomew Gosnold, who planned and did much toward forwarding the enterprise. After his death, all eyes were turned upon Smith as the only man to guide them in this dark hour of trouble. He was called to preside in the council, and he immediately set about fortifying the town and making preparation for a supply of provisions. He put himself at the head of a small detachment of his people, and in an open boat boldly ascended the river. By courtesy among the friendly tribes, and bravery among the hostile, he succeeded in procuring an abundant supply of provisions for the little colony; but in the midst of his successes, he was surprised by a hostile tribe, and after much hard fighting, was taken prisoner. He was immediately dragged toward a tree, where they intended to sacrifice him after their usual manner. Perfectly calm and resolute, Smith desired to see the Sachem, to whom he presented a mariner's compass, told him to what discoveries it had led, explained the form and motion of the earth, its vast continents and mighty seas—in a word, Smith poured a flood of light into the understanding of the old chief that subdued his passions and gained a respite for the captive.

But this respite was short: he was conveyed in triumph to Powhatan, the king or chief sachem of the tribes, and by him condemned to be put to death by beating out his brains with clubs. At this critical moment an angel of deliverance appeared in the person of Pocahontas, the daughter of the king, who, sitting beside her father had watched with intense anxiety the preparations for the execution. She saw the stone brought in, the head of the pinioned captive placed upon it, and the fatal clubs upraised by the powerful arms of two warriors. The fear of punishment could restrain her generous soul no longer, and she sprang to the side of the victim, clasped his head in her arms, and laid her own upon the stone in token of her willingness to become a substitute for the gallant Smith.

The generous heroism of Pocahontas prevailed over the cruelty of the tribe, and life and liberty were granted to the captive. Nor did this noble act exhaust the benevolence of the Indian princess; her whole soul was imbued with sympathy for the defenceless whites, and through her influence they were long abundantly supplied with provisions. Her father became the friend of the English—Smith was held by the surrounding tribes to be little less than the Great Spirit, and for a time the affairs of the colony, under his guidance, were exceedingly prosperous.

At this time, (1608) when the influence of Smith had produced peaceable relations between the colonists and the Indian tribes, a reinforcement of one hundred and twenty men arrived from England, bringing provisions, seeds and agricultural instruments. Universal joy pervaded the colony on the occurrence of this event, but instead of being a blessing, it was a real calamity and came very near proving fatal to the infant settlement. Among the new comers were a few laborers, a large number of gentlemen, and jewellers and refiners of gold; men but little suited to the great task of forming the basis of a new nation. The proprietors of the colony had in view immediate gains to be derived from the mineral wealth supposed to exist in all parts of America, and they were not well satisfied with the attention of the colonists being turned to other pursuits, of a character in fact more utile and prospectively beneficial.

The new recruits came out animated with golden visions, and these were rendered more extravagant on the discovery that a small stream that issued from a bank near Jamestown, deposited a glittering sediment resembling gold ore. The refiners were set at work, and after a bungling assaying process, they pronounced it gold of the richest kind. At once the attention of nearly the whole colony was turned to mining, and its best interests were neglected. Those base passions which characterized the gold-hunters who followed Pizarro into Peru, took root and flourished here: dissensions arose, the peace of the colony was broken up, and the elements of political destruction were soon in active operation.

Smith saw with sorrow this abandonment of those pursuits, which alone could conduce to the prosperity of the colony, and with true patriotism he devoted all his energies in averting the ruin which seemed inevitable. He foresaw the disastrous consequences incident to the neglect of agriculture, and he determined to divert the minds of the colonists from their mad pursuit. To do this, he planned an expedition for extending their discoveries along the coast northward, and farther into the interior, to ascertain the natural resources of the country and to plant a new colony of *laborers* who were yet free from the delusion that had seized a majority of the Jamestown settlers.

With his friend, Dr. Russel, and a few followers, Captain Smith embarked in an open boat on a voyage of discovery along an unknown coast. In two voyages, occupying a period of four months, they visited every inlet and bay on both sides of the Chesapeake from Cape Charles river to the Susquehanna; explored every estuary and penetrated far toward the sources of several of the larger rivers, and embraced a navigation of above three thousand miles. They carefully examined every territory into which they penetrated, made full observations of the strength, character and habits of the various tribes, and after encountering the most arduous toils, privations and dangers, they returned to the settlement, bringing back information so ample and perspicuous of that portion of our republic now known as Virginia and Maryland, that all subsequent researches are but expanded views of their original discoveries. In these two expeditions, this great founder of civilized society in North America obtained a powerful influence over the tribes of the wilderness, and the true relations of his personal bravery during these and subsequent voyages seem like chapters taken from the embellished volume of romance.

The harvest of 1608 fell short, and the colonists looked forward with fear to a season of famine. But the activity of Smith procured abundant supplies for some time. So long as the rivers were open he procured provisions by some means, from the Indians, but when winter set in, these supplies were cut off. Powhatan had become extremely jealous of the control of Smith over the tribes of his realm, and through the influence of the old chief, much assistance was withheld from the whites. Disappointed in the friendship of Powhatan, Smith determined to put on a bold face and bring the old king to submission. He conceived the dangerous plan of surprising him

and carrying away his whole stock of provisions. The Indian prince had formed a similar design respecting Smith, and for this purpose had invited him to his abode, with great professions of friendship. During the whole day he endeavored to persuade the Captain and his party of their perfect security, and to lay aside their arms. Failing in this, he resolved to fall upon them when at supper, and thus destroy them. In this he would have succeeded, had it not been for the friendship of Pocahontas. She, who before in the hour of peril had come like an angel of mercy to the rescue of Smith, now quietly stole from the presence of her father, and through the gloom of the forest at night proceeded to the camp of the whites, and with tears in her eyes revealed to the Captain the secrets of the horrid plot. The English were consequently prepared and thus saved their lives.

Soon after this event, Smith was invited to visit Opecancanough, the chief by whom he was formerly taken prisoner. He made every friendly pretension, while his men lay in ambush, ready to fall upon the whites at a given signal. Happily, Smith discovered the treachery in time, and seizing the chief by the hair and presenting a pistol to his breast, he led him to the ambush and made him order his men, not only to lay down their arms, but to fill his boats with corn.

At another time, he was met alone in the woods by the chief, Paspahi, who attempted to shoot him. Smith was armed only with a sword, but he unhesitatingly attacked the savage in close combat. In this struggle they fell into the river, but Smith finally succeeded in grasping the chief by the throat, dragged him ashore, and led him a prisoner to Jamestown. These and many other acts of personal bravery on the part of Smith, re-awakened that reverence for him among the tribes, which the treachery of Powhatan had weakened, and secured peace to the colony as long as he was in Virginia.

He performed the duties of president of the colony with the most rigid exactness, and enforced with severity, every law which tended to the public weal. Industrious himself, he made laws to oblige others to be so, and although some murmured at his severity, all acknowledged that his system was calculated to give health to their persons and strength to the state. In connexion with the labor of tilling the soil they turned their attention to the useful arts; manufactured tar, pitch and potashes, and made glass and earthenware. During the winter of 1608–9, they built twenty new houses, erected two blockhouses, made nets for fishing, dug a well in the fort, and commenced another fortress upon an eminence that overlooked the town; and as spring advanced they cleared up and prepared for tillage many acres of land.

Such was the prosperous state of the colony of Virginia under the guidance of Smith, when, through the intrigues and misrepresentations of those whom he had dismissed from the settlement, he was superceded; and, having met with a severe accident, requiring good surgical attendance, he sailed for England, leaving behind him, in a permanent and now prosperous colony, the good fruit of three years of incessant toil and hardship. He left behind him the germe of a great nation, and when we view him in the true light in which correct history places him, as the instrument in the salvation of the Virginia colony, we cannot but regard him as the great Founder of civilization on the western continent.

USE OF THE BAROMETER.

I. The rising of the mercury presages, in general, fair weather, and its falling, foul weather; as rain, snow, high winds, and storms.

II. In very hot weather, especially if the wind is south, the sudden falling of the mercury foretels thunder.

III. In winter, the rising indicates frost; and in frosty weather, if the mercury falls three or four divisions, there will follow a thaw; but if it rises in a continued frost, snow may be expected.

IV. When foul weather happens soon after the falling of the mercury, it will not be of long duration; nor are we to expect a continuance of fair weather, when it soon succeeds the rising of the quicksilver.

V. If, in foul weather, the mercury rises considerably, and continues rising for two or three days before the foul weather is over, a continuance of fair weather may be expected to follow.

VI. In fair weather, when the mercury falls much and low, and continues falling for two or three days before rain comes, much wet must be expected, and probably high winds.

VII. The unsettled motion of the mercury indicates changeable weather.

VIII. Respecting the words engraved on the register-plate of the barometer, it may be observed, that they cannot be strictly relied upon to correspond exactly with the state of the weather; though it will in general agree with them as to the mercury rising and falling. The words deserve to be particularly noticed when the mercury removes from "changeable" upwards; as those on the lower part should be adverted to, when the mercury falls from "changeable" downwards. In other cases, they are of no use; for, as its rising in any part forebodes a tendency to fair, and its falling to foul weather, it follows that, though it descend in the tube from settled to fair, it may, nevertheless, be attended with a little rain; and when it rises from the words "much rain" to "rain," it shows only an inclination to become fair, though the wet weather may still continue in a less considerable degree than it was when the mercury began to rise. But if the

mercury, after having fallen to "much rain," should ascend to "changeable," it foretels fair weather, though of a shorter continuance than if the mercury had risen still higher; and so, on the contrary, if the mercury stood at "fair" and descends to "changeable," it announces foul weather, though not of so long continuance as if it had fallen lower.

IX. Persons who have occasion to travel much in the winter, and who are doubtful whether it will rain or not, may easily ascertain this point by the following observation:—A few hours before he departs, let the traveller notice the mercury in the upper part of the tube of the barometer: if rain is about to fall, it will be indented or concave; if otherwise, convex or protuberant.

When the character of the season is once ascertained, returns of rain or fair weather may be judged of with some degree of certainty in some years, but scarcely guessed at in others, by means of the barometer; for, in general, we may expect, that when the mercury rises high, a few days of fair weather will follow. If the mercury falls again in two or three days, but soon rises high, without much rain, we may expect fair weather for several days; and, in this case, the clearest days are after the mercury begins to fall. In like manner, if the mercury falls very low, with much rain; rises soon, but falls again in a day or two, with rain; a continuance of bad weather may be feared. If the second fall does not bring much rain, but the mercury rises gradually pretty high, it prognosticates settled good weather of some continuance. When a heavy rain has fallen upon the mercury's sinking, and its continuing steadily low, the weather is sometimes fair and promises well; but no prudent farmer should trust to such appearances. There is, indeed, a caution of this kind which the poorest may profit by. When the mercury rises high in the barometer, the moisture on the surface of the earth disappears; this, even though the sky be overcast is a sure sign of fair weather; but if the earth continue moist, and water stands in shallow places, no trust should be put in the clearest sky, for it is in this case deceitful.

Toward the end of March, or more generally in the beginning of April, the barometer sinks very low, with bad weather; after which, it seldom falls lower than 29 degrees 5 minutes, till the latter end of September or October, when the quicksilver falls again low, with stormy winds, for then the winter constitution of the air takes place. From October to April, the great falls of the barometer are from 29 degrees, 5 minutes, to 28 degrees, 5 minutes, and sometimes lower; whereas, during the summer constitution of the air, the quicksilver seldom falls lower than 29 degrees 5 minutes. It therefore follows, that a fall of one tenth of an inch, during the summer, is as sure an indication of rain, as a fall of between two and three-tenths is in the winter.

It must however be observed, that these heights of the barometer hold only in places nearly on a level with the sea; for experiments have taught us, that for every eighty feet of nearly perpendicular height that the barometer is placed above the level of the sea, the quicksilver sinks one-tenth of an inch; observations alone, therefore, must determine the heights of the quicksilver, which in each place denote either fair or foul weather.

Very heavy thunder-storms happen, without sensibly affecting the barometer; and in this case the storm seldom reaches far. When a thunder-storm is attended with a fall of the barometer, its effect is much more extensive. When the quicksilver falls very low, and the weather continues mild and the wind moderate, there is at the same time a violent storm in some distant place; this accounts for a false prognostic, with which the barometer has often been unjustly charged. The effects which heat, cold and wind, severally produce on the glass, independently of the dry or humid state of the atmosphere, should likewise be considered.

From the preceding remarks and facts, it will be obvious to the reflecting reader that a barometer is almost as useful an appendage to the farmer as any other implement; for, as an intelligent writer in the "Agricultural Magazine" has observed, unless his operations are conducted with an attentive eye to the present or probably future state of the weather, as well as soil, the produce of his labors will either fall far short of his expectations, or (which to him is equally fatal) will suffer from ill-timed though otherwise commendable exertions to house it.

It is a curious fact, that notwithstanding every merchant vessel has a barometer, and considers it more important than any other instrument except the compass, still there were but seven barometers in the United States' Navy two years ago. We have this from good authority, and hope some member of the Navy Board will explain the anomaly.

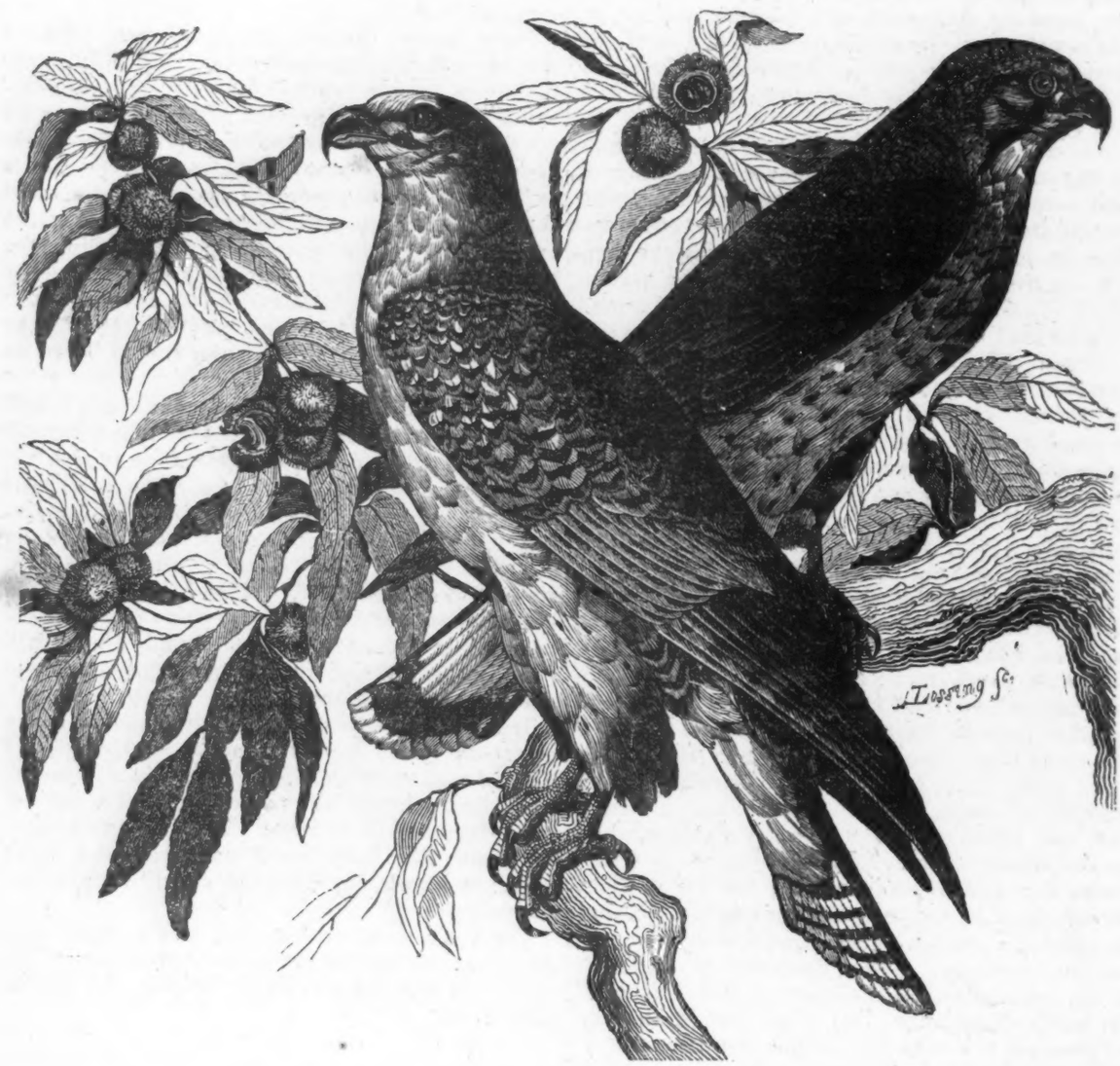
We are informed that only a few years ago, there was not a barometer or a chronometer furnished in the British Naval service, as a public naval store.

NEW SPIDER.

Mr. Mc Leay, in describing some new forms of *Arachnida*, notices a specimen of the genus Deinops, above all others interesting in the position of the eyes, which are remarkably unequal in size. Two of them are dorsal, as usual, but the other six have a novel situation, not being visible when we look on the back of the insect. The head, being truncated in front, presents, like that of certain saltigrade spiders, or rather like certain crustacea, a vertical face. Half of this face is occupied by two enormous black eyes, set in blood-red circular rims, which touch each other laterally, and form irides, that give our spider a most truculent aspect. The spider is found under stones in the island of Cuba.

Men are generally improved by blame, and women by praise, because each produces a profounder impression on one, less than on the other

NATURAL HISTORY.



Falcons.

THE PEREGRINE FALCON.

THE peregrine falcon, (*Falco peregrinus*,) is the falcon *par excellence*, because, though perhaps not the most powerful, it was the most generally in use, and also one of the most elegant. The length of the female is about sixteen or seventeen inches, and the extent of the wings an inch or two more than three feet. The bill is bluish black, yellowish at the base; gape and cere yellow. The whole upper parts of the plumage dusky black, with a cinereous dash; the shafts of the feathers black, and the margins slightly edged with ferruginous brown; the forehead pale; the sides of the neck and back mixed with yellowish white; a black patch behind the eye; from the corner of the mouth a broad black streak pointing downward, chin ferruginous white; the whole of the under parts the same, with a broad streak of dusky black down the shafts, less conspicuous on the throat and vent; under and upper tail coverts barred with dusky and ferruginous white, the former dashed with cinereous; quill feathers dusky black dashed with cinereous; the inner webs with transverse oblong spots of ferruginous white; the under coverts of the wings alternately barred with black and white. Tail dusky black, dashed with cinereous, with eight pale ferruginous bars, least conspicuous on the outer webs of the exterior feathers; one of the bars constitutes the extremity. The bill and talons of this species are remarkably strong, the former being much hooked, and furnished with a toothlike process on each side of the upper mandible, which enables it to cut and tear its prey with greater ease. The wings are very pointed, the second feather being the longest, the first not much inferior, and the tail short, so that the wings when closed reach very near the end. The legs short, strong, and pale yellow; the toes long, and furnished with a projecting callus beneath at the second joint.

Though most abundant in the hilly parts of the temperate regions of the world, the peregrine falcon, from the vigor of its flight, is occasion-

ally seen in all parts of the world, at least of the eastern hemisphere; and indeed the range from the middle of Europe to that of Africa is only a morning's flight for it. It is also as long-lived as it is fleet and discursive. One is mentioned as having been met with in Southern Africa, in the year 1793, wearing a gold collar dated 1610, and known at that time to have belonged to James I. king of England; though more than one hundred and eighty years old, it was still in complete vigor.

The peregrine falcon inhabits all the temperate and colder parts of Europe, ranging from Iceland to the islands of the Mediterranean, frequenting high and rocky mountains, and building its nest, about the end of February, in precipitous cliffs, with a southern aspect. The eggs are generally three or four in number, white and spotted with brown. It is rarely met with in champaign countries, and never in those of a marshy description. In Germany and France it abounds, is pretty common in Holland and England, but is seldom met with in Switzerland. There is scarcely any part of the English coasts, from north to south, where the cliffs rise to three or four hundred feet, in which they are not found. We may also remark that they are very courageous birds, darting suddenly, perpendicularly, and with great rapidity, on their prey, which principally consists of partridges, pheasants, quails, wood-pigeons, &c., and the smaller quadrupeds. They also attack the kite, and compel it to relinquish its victim, but spare its life, as if in contempt of such a dastardly adversary.

Of all the prey at which the peregrine flies, the heron appears to be the hardest to master. This arises in a great measure from the height at which the heron flies, and which renders it very difficult for the falcon to get the sky of him; and as falcons can do little or nothing to a bird above them, the heron is in perfect safety as long as he can keep uppermost. There is an account given by Colonel Montagu, which is worth quoting in order to show how determinedly the heron will resist, even when subjected to that mutilation which sportsmen sometimes practise when they have made up their minds as to which of two contending animals shall certainly have the advantage. A female falcon of a year old, in the possession of Colonel Montagu, which had been taken before it could fly, and thus had had no experience in the killing of any thing but a small bird occasionally, was kept a whole day without food. At the expiration of this period, an old male heron was introduced into the apartment of which the falcon had free range; but the point of the heron's bill had been previously sawed off. "As soon as the heron was in motion, the falcon, who was also deprived of the means of flight, took post on a stool which was at one end of the room; and as the heron, regardless of his enemy, traversed the apartment, the falcon motionless kept her eyes fixed on her destined prey, till, after several turns round the room, she judged the heron was sufficiently near to effect her purpose, when she sprang at the head, intending to seize that part with her talons. In this, however, she failed, the stool not having given her sufficient elevation to reach the highly erected head of the heron. This failure might probably have cost the falcon her life, had the bill of her antagonist been perfect; for she received a blow on her body that must otherwise have inflicted a severe, if not a mortal, wound from so pointed an instrument urged with such power. Baffled in this attempt, and having received a severe blow, it was conjectured no further attack would be made until the calls of hunger became more urgent. The falcon, however, soon regained her station, and it was not long before we perceived the heron, regardless of his foe, again pass very near, when the falcon, in a second attempt to seize her prey as before, was equally foiled, and again received a severe check from the bill of the heron. Finding her efforts had failed for want of the advantages nature had assigned her, instinct directed the falcon to a box that stood on the opposite side of the room, which was somewhat higher. Here she again seemed to meditate another attack by watching every motion of the heron, who continued his rounds with a view to make his escape; and it was not long before an opportunity offered for falco to make an assault from her more elevated station. Here she had found an humble substitute for those powers with which nature had so amply furnished her, but of which she had been deprived, and at last succeeded in springing from her perch and seizing the unfortunate heron by the head and upper part of the neck with her talons, which instantly brought him to the ground. Now the unequal contest was soon determined; for in vain did the superior weight and strength of the heron drag and flounder with his enemy across the floor; in vain did he flap his unwieldy pinions to shake off the tyrant of the air; nor could even his gigantic legs force her from her bloody grasp; her work was short and certain; no efforts could compel her now to quit her deadly gripe; the powerful and only dreaded arms of her antagonist were secured, and, thus disarmed, he became a sure and easy prey. Scarcely was the gigantic bird prostrate on the ground, than death ensued; for in this noble race, destined for blood and slaughter, torture makes no part of its nature, but, like what we are told of the generous lion, exulting in death, but disdaining cruelty, in less than half a minute did the falcon tear out the gullet and windpipe of the heron, and regale on the head and neck."

THE BLIND BUFFALO.

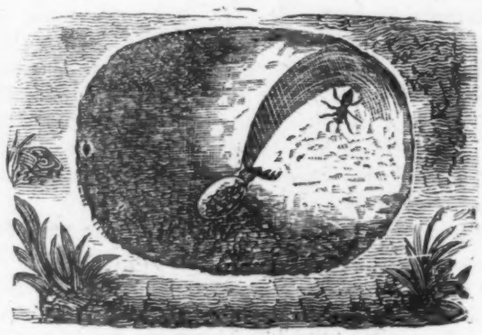
This extraordinary animal is sometimes, but not often, found completely deprived of sight. Prairie travellers differ in accounting for its loss of vision, but its singular peculiarities when blind are well known. It is seen alone, having lost the track or smell of its companions, and at this time its conduct is most curious, running with headlong speed a small circle, which it gradually widens until it forms a circumference of miles. Its object in this must be to make sure of the safety of the ground—or perhaps to catch scent of its companions. But its most striking characteristic is attacking instead of flying from danger.

The hunters well know that the buffalo is never dangerous until wounded, and then when hot pressed, it will often gore the horses. But the blind bull (the cows are never found in this condition) darts at an enemy the instant he is discovered, and wo to the unfortunate hunter who is not expert in his horsemanship. These animals are extremely hard to kill, and die tearing the ground with their horns in great fury. They are invariably old, and their flesh is unfit for food. Their skin is taken by the hunters, but their carcass is left for the wolves and crows, and the bones do not lie long before they are polished as white as marble gravestones, and like gravestones they lie all over the green prairie; while the traveller's wonder at the legions that have passed away is only exceeded by his astonishment at the myriads that remain.

MYRMELIONIDÆ.

This family of neuropterous insects, have the tarsi five-jointed, the body long and slender, the head not produced into a rostrum, the antennæ thickened at the tips, the wings of equal size, and in repose applied against each other above the back, like the roof of a house; the ocelli wanting and the legs short. These insects are found in warm situations in the meridional countries of

the Old and New World; they fly but little during the day, remaining quiet among the leaves of different plants. The habits of the larvæ are, however, quite the reverse of this. The insect is also known under the name of the ant-lion (*Myrmeleon formicaleo*, Linnæus), which it has obtained from the great havoc which it makes in destroying ants and other small insects in an exceedingly ingenious manner. The abdomen is very large, in proportion to the rest of the body, and fleshy; the head small, flattened, armed with two long jaws like horns, or rather more like a pair of calliper compasses, but serving as instruments of suction instead of mastication, being channelled on the under side. These organs have indeed been described as perforated and tubular, but such is not the case; the maxillæ, which have been overlooked or considered as a portion of the mandibles, fitting into the channel, and assisting in suction: the body is gray or sand-colored; although provided with legs, these organs are so unfitted for active motion that the insect is unable to follow its prey, like the larvæ of the *Hemerobiidæ*, which in several respects it very much resembles: indeed its ordinary motions are either backward or sidewise. How then is this slow unwieldy animal to obtain a supply of food, consisting as it does of insects of such activity as the ants? This is effected by means of a snare or pitfall, which it excavates in the sand, at the foot of which, when completed, it takes its station; but, lest its hideous form should alarm its victims, it buries itself at the bottom, leaving only the head exposed.



Pitfall of the Ant-lion.

These pitfalls vary in diameter from one to three inches, according to the size of the larva by which they are constructed. When the insect has fixed upon a spot for its retreat, it first marks out a circle, to which the exterior of its intended pit is to extend: it proceeds working backward, shoveling or scooping the sand by means of the fore leg on the side which is nearest the centre of the hole upon the back of its head, and which it then, by a sudden jerk, throws several inches beyond the circle; in this manner it proceeds circle after circle, but alternately reversing its position, so that the opposite leg may alternately be employed as a shovel; and so quickly does it carry on its operations, that in the course of half an hour it has raised a cone of sand equal in diameter to the diameter of its pit. Sometimes, however, it meets with serious obstacles—pieces of stone, &c., interrupt its path, which require the greatest exertions to remove; sometimes it is able to effect this, which is done by jerking the stone with its jaws beyond its burrow; but, in case the stone is much heavier than itself it contrives to place the stone upon its back by the alternate motion of the rings of the body, and in this way carries it up to the margin of its cell, when it rolls it away. Sometimes indeed it is unable to perform this, and, after various ineffectual attempts, is compelled to quit the spot and recommence the forming of a fresh pit in another place. When it has completed its work it has now to lead a life of wearisome patience. It takes its station at the foot of the pit, and there waits until an unlucky chance brings some hapless ant down the precipice, which it immediately seizes with its exserted jaws, sucks, and then casts away with a jerk. If the unfortunate insect should happen to struggle, and endeavor to escape, it showers upon it, by means of a jerk with its head, a quantity of sand, which seldom fails in bringing it within its reach. From its habits it may be imagined that it is enabled to undergo a long-continued fasting. When it is full grown it forms for itself a perfectly round cocoon, of a white, shining, silky matter, externally covered with sand, within which it is transformed into a short curved inactive pupa. In about fifteen or twenty days the imago bursts forth, in a form quite unlike that in which it had previously appeared, leaving the exuviæ of the pupa sticking in the

aperture formed for its exit out of the cocoon. There are many species of this genus, some of very considerable size, being larger than the largest dragon-flies. In all the species the wings are most beautifully reticulated, resembling the finest lace-work, and variegated with dark spots and markings, giving the insect a very elegant appearance.

The other genus belonging to this family is *Ascalaphus* (Fabricus), the species of which constitute one of those interesting groups of animals which, while possessing the real character of one tribe, assume the appearance of another totally distinct, exhibiting what has been termed a relation of analogy in distinction from one of affinity. This kind of relationship is met with in almost every group of animals in a greater or less degree; and from the frequency of its occurrence naturalists are led to believe that in the great and natural distribution of animated nature—that system, in fact which places every animal in its own situation with reference to the habits and structures of every other animal—these analogies are not casual circumstances, but necessarily attend the higher and more close relations of affinity. The species are chiefly found in the south of Europe. They inhabit hot, sandy districts, and fly quickly.

AMERICAN ANTIQUITIES.

PERUVIAN JARS

In former volumes we gave detailed accounts of the discoveries of Palenque, Mitla and other American cities, buried for unknown centuries beneath the earth, and marked the traces of civilization which their exhumation revealed. It is much to be regretted that Americans take so little interest in the antiquities of their own continent; and it is really strange that men of fortune and learning who have the means of doing much toward elucidating the ancient history of our country, should prefer to encounter the perils of an ocean voyage and the still greater perils of the desert, to collect rich stores of antiquarian knowledge from the magazines of Egypt and Idumea, when so much that is valuable, remains to be explored and discovered at home. Along the valleys of the Mississippi and Missouri and extending through Central America to the Isthmus of Darien, there are traces of cities and other evidences of refinement, which tell, in language not to be misunderstood, that a powerful and enlightened people once occupied those regions, now nearly depopulated wildernesses.

It is evident that this ancient people moved southward, at different periods, though probably remote from each other, and penetrated the southern portion of our continent as far as Peru. We cannot here, in our introduction to the following article from a foreign periodical, discuss the question of these migrations, or the probable extent to which this people were advanced in civilization; in a future number we shall give a view of one of the ancient Peruvian temples, and shall then take a more extended view of the empire of the Incas. It is enough for our present purpose to say, that, according to the Peruvian traditions, civilization was introduced into their country by Manco Capac, about four hundred years before it was invaded by the Spaniards under the infamous Pizarro. When he conquered Peru, and overthrew the Inca dynasty, he found the people versed in many of the arts of civilized life. They built bridges, constructed roads, fused metals, cultivated architecture and other useful arts, and were governed by a written code of laws, &c., &c.

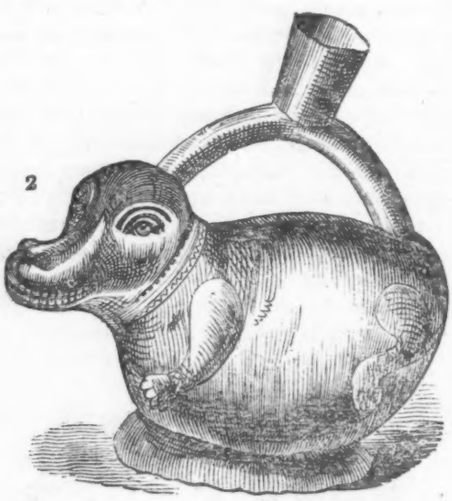
The following cuts exhibit a number of jars, found in (what is supposed to be) one of the tombs of the Incas, and recently sent to London.

"These vessels were found in what are known as the Huacas, or tombs of the Incas, near Truxillo in Peru. But as the Peruvians in the fifteenth century are described as having arrived at a considerable state of civilization, and as their temples and buildings, both public and private, were richly adorned with exquisite workmanship, these rude remains must have been of much more ancient date, and are probably long antecedent to the conquest of Peru by Pizarro and his followers. Truxillo was founded by him in the year 1534. It is therefore to be presumed that it could not have been the burial-place of the Incas.

1

1. This ancient vessel appears to have been intended to hold liquor as a bottle. The figure is in a sitting posture, with the knees up; the

head covered with a cap composed of two parts, confined under the chin by a string or band; the face, though rudely formed, exhibits the placid character of sleep or death, the closed eyes indicating the one or the other; the mouth is wide, the nose large, the lobes of the ears perforated, and much elongated by the weight of the large ornament thrust through them; the back of the body is enveloped by a mantle or cloak, having a collar quite round the neck, tied at the throat, the ends of the fastening hanging over the breast; there is no appearance of other garments; the limbs are very stiff and badly executed. It holds in its hands a fruit bearing some resemblance to a pineapple or cherimaya, in which is a small air-hole to admit of the liquor flowing at the larger orifice; this is situated on the top of the handle, and there appears to be a figure of a monkey looking into it; the head of the monkey in the original is broken off. This vessel is eight inches high, five and a half from the breast to the lower part of the handle, and the diameter of the base four and three quarters. Its color is dark ash, approaching to black, with some lighter shades; it does not appear to have been cast; if so, it was fashioned by a tool afterward, as the marks of scraping and smoothing are very visible.



2

2 This was found with the preceding, and appears to be for the same use. It seems to be a rude representation of the hippopotamus; the head is flat and broad, with an extraordinary wide mouth; it has a curious collar partly round the neck; the legs are placed in an unmeaning manner on the sides, much too small in proportion; it stands seven and a half inches high, and seven and one quarter from the point of the nose to the hinder parts; its color nearly black, composed of grayish sandy earth, and appears sun-dried only. The foot or stand is hollow.

3. This is in form of a modern pitcher, with a grotesque face raised on its surface, the ears projecting from the sides. It bears marks of having been formed in a mould, and afterward, while the clay was wet, the figures were carved or raised on it; either this is of much more ancient date than the others, or it is the work of a very inferior artist, as the figure is more like the production of the natives of the South Sea Islands. It stands obliquely, as figured, the bottom being rather convex; it is five inches high.

3

4

4. This bottle is of a different color from the others, being a light red with white stripes painted on the surface, and the earth of which it is formed is of a much finer texture. If such a hospitable custom prevailed among the aborigines of Peru, as presenting their friends with the stirrup-cup, this with great propriety may have been used for that purpose; it stands seven and a half inches high, and the diameter is four and one quarter; the bottom is rather convex.

5. This jar stands nearly six inches high, its diameter is four and a half; color black. There is a greater degree of elegance both in the form and pattern of this than in any of the others. Here may our lovely countrywomen observe a fac-simile of the scroll which perhaps their fair fingers have braided within a few weeks or days, proving that "nothing is new under the sun." The grotesque figure which forms the handle is intended for a monkey. The pattern is carved or indented, and exactly represents the *Vitruvian scroll* and the *Grecian fret*. This will naturally give rise to many conjectures respecting the adoption of such ornaments by the inhabitants of a country so far remote from the seat of arts. It is certainly a curious coincidence of ideas, that a people apparently so rude should have chosen an

ornament similar in all its chief points to the most ancient enrichments of the earliest Grecian age, which are to be found on the Lantern of Demosthenes at Athens (in the year 336 B.C.) The most learned antiquary, will probably find great difficulty in unravelling the mystery.

6. This jar is quite plain, and requires no observation to illustrate it; its form speaks for itself; it is nine inches high, and eight in diameter; color black.

MARL, IN MONROE CO., N. Y.

THE substance usually denominated marl, is a calcareous deposite from springs, but partially decomposed. Calcareous shales are properly marls, and will be so considered.

Rain water has the property of dissolving the calcareous rocks over which it flows, but the water of many springs dissolves much more. This property is owing to the presence of carbonic acid gas in the water; when the acid is dissipated in the atmosphere, the calcareous matter before held in solution is thrown down. The loose, porous portions of this deposite, usually containing incrusted plants, leaves and other substances, is called tufa; the more compact parts are called Travertin. Besides these, a portion of the deposite in some situations is of a fine pulverulent texture, often containing great numbers of the shells of *Cyclas*, *Lymnea*, *Planorbis*, &c. and sometimes a great proportion of the deposite is made up of fragments of these shells. This substance is usually termed shell marl, though in many of the deposites the shells are al most entirely absent. When the deposite is made in a swamp, or beneath water, it assumes the fine pulverulent texture: but when exposed, or when the deposition is disturbed, it forms tufa. Tufa is also formed in small quantities, in hundreds of localities, where shell marl is not found.

Wherever the calcareous rocks are exposed, the action of rain, and the percolation of water from the soil produce depositions of tufa. Along all the streams and rivers where calcareous rocks form the banks, we find deposites of tufa collecting, and remaining attached to the rock, till, from their increasing weight, they fall into the stream.

Along the Genesee river, below Rochester, are considerable accumulations of this substance. Vast quantities of calcareous matter are also carried down this river and smaller streams, to be deposited in Lake Ontario, probably in much more extensive beds than those found on land.

Tufa is mostly used for burning into lime, of which it affords a fine quality. The more compact parts of it have been employed for building, and form a cheap and durable material. When first removed from the ground, and while moist, it is easily cut or sawed, and is thus shaped into blocks of any required dimensions. After exposure the moisture evaporates, and it becomes very hard.

Deposites of shell marl are found in various places in Monroe county. The most important locality is in the southern part of the county, along the course of Allen's creek in Wheatland. The eastern part of this deposite extends southward into Livingston county. Tufa forms the upper portion of this deposite in many places to the depth of three or four feet, and below it is the shell marl three or four feet thick. Some portions of the formation are nearly pure carbonate of lime, containing abundance of the shells mentioned: in other places it is impure from admixture of earthy matter. It extends, in length, about three miles, and in breadth from half a mile to one mile. The general thickness is about five feet, though often much greater. At its smallest dimensions, we shall find it 125,452,800 cubic feet, or 2,309,056 loads.

Another extensive deposite of this material is found along the course of Mill creek, extending from its source to Cady pond, and filling the marshes around the pond for the extent of many acres. Its thickness is unknown, but in some

places it exceeds three or four feet. Tufa forms in many places in exposed situations along this deposite. In low grounds here, where ditches had been dug, I observed the marl lying on the surface as it was thrown out.* The farmers generally do not appear to be aware of its importance. The soil above these deposites is usually a light, partially decomposed vegetable matter, allowing the water to pass through it, by which means it soon becomes parched, and the crops perish. By spreading on this soil a small quantity of clay or loam and the marl beneath, it could be made of the finest quality.

In the town of Riga, on the land of Mr. Knowles, a deposite of this marl of unknown depth, covers thirty or forty acres. It has been penetrated ten or fifteen feet without finding its termination. The upper portions are very pure carbonate of lime, yielding lime of a very superior quality. It is cut out, while moist, in masses of the form and size of bricks, and laid in a kiln and burned. After penetrating this deposite about two feet, it becomes mixed with sand and other impurities, rendering it unfit for lime, but not for manure. By accident, several loads of this marl were deposited and remained for several years on a barren piece of ground; afterward this spot was ploughed, and has yielded large crops every year since, though before it produced almost nothing. Strange as it may seem, this change in the character of the soil was not attributed to the marl, consequently it has not been used on other parts of the farm. Numerous other localities have been noticed, but these are the most important. Those enumerated are upon the gypseous rocks, and similar deposites may be expected in the low grounds throughout the whole of this formation, the extent of which may be learned by referring to the description.

In several places east of the Genesee, in Monroe county, this marl has been found in small quantities. The gypseous formation on that side of the river is mostly covered with diluvial hills.

Small deposites of tufa and shell marl are found along the country north of the mountain ridge, arising from the decomposition of the calcareous shales above the sandstone. Some of these deposites are of sufficient magnitude to supply one or two farms with this article for manure for a great period of time.

From the texture and composition of these shales and of the gypseous rocks, they are more readily dissolved than the solid limestone, and it thus happens that little tufa or marl is found on the limestone proper. Among the gypseous rocks, the process constantly going on to form sulphate of lime, liberates large portions of carbonic acid, and this is doubtless the cause that deposites of marl and tufa are so much more extensive in this formation.

The partially decomposed calcareous shale above the sandstone affords a good manure for sandy lands, but contains too much clay to be advantageous on lands which already have that substance. This shale in many places contains iron pyrites, which, by its decomposition, produces gypsum. This is found from experiment to be eminently useful on sandy soils. All the shale readily crumbles into fine particles, and in this state could be spread on the soil, where its more complete decomposition would be effected by the atmospheric agents, and during the process, the required stimuli furnished to vegetation.

This shale has been quarried at Marshall's mills in Ogden, ground and used on the soil, under the impression that it was gypsum. At this place the shale contains pyrites disseminated through it, and from its decomposition gypsum would be formed. In many places north of the mountain ridge, the shale approaches the surfaces, and could be readily obtained for manuring lands.

The decomposing gypseous rocks afford a marl, which is sometimes too clayey to be beneficial as a manure, but in other cases it is valuable, especially when mixed with shell marl. This marl approaches the surface in many places in the town of Pittsford, where it is of a character well adapted for use on sandy lands. The same marl occurs also east of Pittsford, along the line of the canal, and at Fairport. Gypsum in small quantities has been found in the marl at these localities. On the west side of the river we find the gypseous marl in Riga, Chili and Wheatland, in some places approaching the surface, or appearing in the beds of small streams. The only place where this marl has been applied is in the town of Wheatland. Mr. Merry has used this and the shell marl, separately and mixed, and finds the results fully to realize his most sanguine expectations. Used on the light vegetable soil of the swamps in that neighborhood, this marl has produced astonishing results. A meadow of this vegetable soil, which produced little or nothing, was dressed with this marl, and sown with timothy-seed, and in less than ten weeks from the time of sowing, three tons of hay to the acre were cut from the meadow. The composition of this marl is admirably adapted to fertilize such soils, producing a mixture of calcareous, aluminous and vegetable matter. Without dwelling longer on particular localities, we may observe, that this marl may be found on almost every farm in the southern range of towns in this county.

The indurated marl of the marl and sandstone formation is also a good manure, apparently a stimulant to vegetation. The iron in the rock is probably the substance which acts as the stimulant, though there may be other ingredients which produce the same effect. I have not seen it used extensively upon any crop, but where thrown upon the surface from excavations, the natural vegetation is always much more thrifty.

Bog ore is another material which may be applied as a manure in many places. I do not know that it has yet been used, except where a bed of it has been so near the surface that the plough has scattered it. In these cases it is found that the crop is much more thrifty in that part of the field. This ore is so extensively distributed, that it could be obtained for manure on almost any farm north of the mountain ridge. It is also found in many places in the southern range of towns.

* The source of this stream is a spring rising among the gypseous rocks. The spring in Caledonia, Livingston county, is the source of the stream from which most of the marl of the first named locality is deposited.

FIRE STONE.

A STRATUM of light gray siliceous limestone, of a porous texture, extends through the towns of Ogden and Sweden, Monroe Co., N. Y. This stone resists the action of ordinary fires for many years with little apparent loss or change. Its character depends on the presence of siliceous and magnesian earths, and the porous structure of the stone, which prevents it from cracking when heated. The stone can be obtained of any desirable dimensions at the quarry of the Messrs. Fenton, two miles south of Brockport. It is much used in this neighborhood for the backs and jambs of fireplaces, and also for door and window caps and sills. At the place where the stone is quarried the stratum is not seen in place, but masses of the broken outcropping edge are used.

Some of the strata of the gypseous rocks are sufficiently siliceous to be a good fire stone, and have been used for hearths of iron furnaces.

Some of the more siliceous strata of sandstone furnish a good fire stone, where great heat is not required. N. Y. Geological Reports.

THE ACCORDION.

IN an essay on "Music and musical instruments" in a former number of the Magazine, we incidentally mentioned the *Accordion*, as an instrument of recent invention, and, when played upon by a skilful hand, a pleasing accompaniment of the human voice. The following article contains a detailed account of this instrument:—

"Most of our readers are probably familiar with the external appearance of an Accordion. We may consider it as a rectangular pair of bellows, varying from six to about fourteen inches in length, and from three to six in width. There are from six to twenty finger-keys attached to one of the boards, in a manner convenient for the player; and these keys are in connexion, by means of wires, with an equal number of circular valves or stops, which cover circular holes perforated through the board or face of the instrument. Immediately beneath the perforation is a series of oblong apertures with metallic tongues vibrating freely in them, and beneath the tongues is the open cavity of the bellows. The vibrating tongues are not all in communication with each other, there being two placed under each circular hole, and cut off from those in the vicinity. Of the two which form each of these clusters, one can only vibrate when it is impelled by wind from above, and the other when it is similarly impelled from below. This is effected by means of little valves placed below in the one case, and above in the other: the action of the valves in a pump will sufficiently explain this.

"The tuning of the instrument is thus managed. Suppose, for simplicity of illustration, that there are only four finger-keys; these will open as many circular holes; but as each hole is connected with two springs, eight notes can be thereby produced. The two springs opening under one hole are made to yield adjoining notes in the musical scale, so that the first key is in connexion with the springs C and D, the second with E and F, the third with G and A, and the fourth with B and C, thereby making up an octave. Nearly the same plan is observed when the number of keys is greater, except that in some complicated instruments all the semitones, as well as the natural notes, are introduced.

"This being the arrangement of the keys, the mode of playing is as follows:—There are no openings in the case of the instrument but what are stopped by keys; so that some key must be touched before the bellows are drawn out, else there would be a partial vacuum in the instrument, and it would be liable to be burst. Suppose then we draw out the bellows and press down the key in connexion with the springs C, and D; the circular hole is opened—air enters—passes by one of the springs, (say D) into the body of the instrument, and sets the spring into vibration, thus eliciting its sound. On closing the bellows the air rushes back again, but cannot pass the spring D on account of a valve placed there, but passes the spring C, and elicits its sound. But if we want any other two notes, say E and F, we touch the adjoining key, draw out the bellows to produce one note, and close them to produce the other. By a skilful choice therefore of the keys which we touch, we can go through all the varieties of a melody, and even of harmony, by using two or three keys at once.

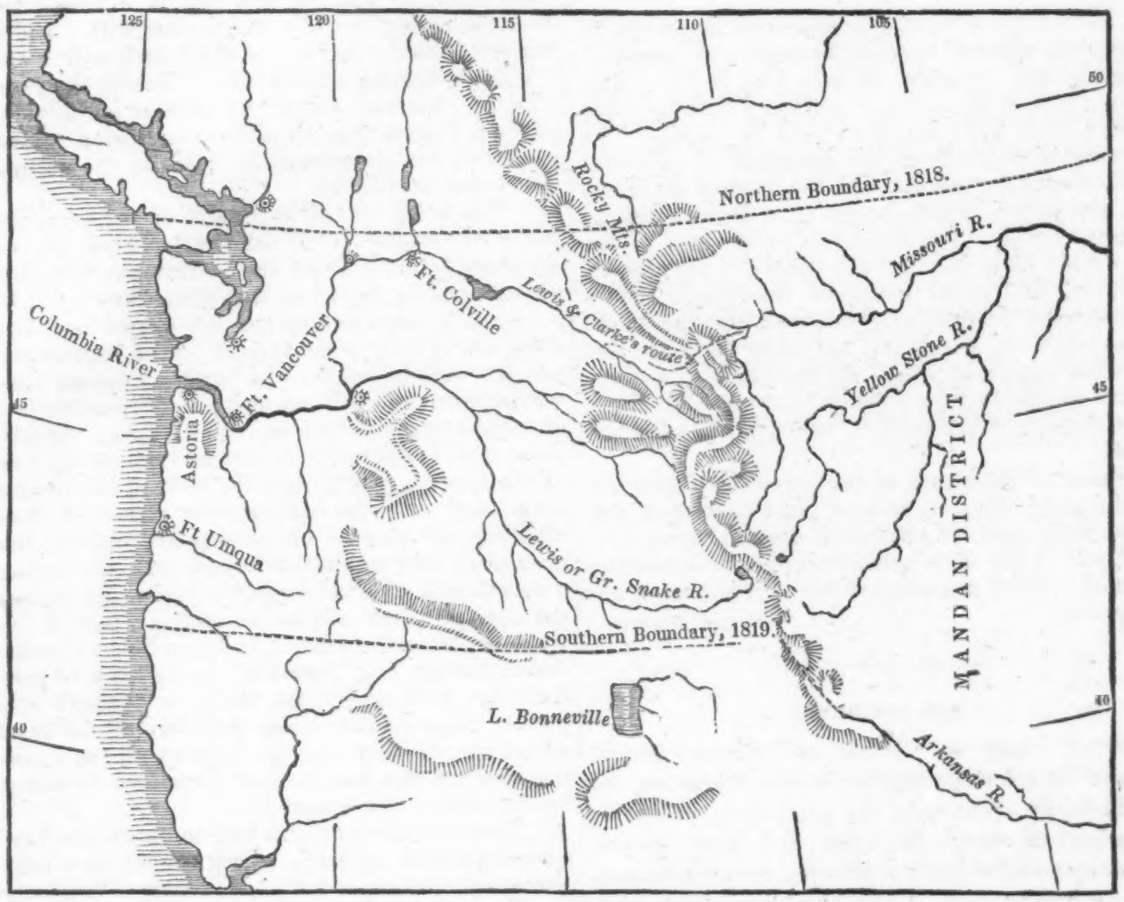
"There is also an extra key to produce a harmonized chord, or base; a key to act as a vent without producing sound, and a variety of intricate contrivances which could not be adequately explained without a longer description than we can devote to them. But the foregoing will suffice to give a general idea of the instrument."

Penny Mag.

A CHINESE MAP OF THE WORLD.

IT is two feet wide by three and a half high, and is almost covered with China! In the left hand corner, at the top, is a sea, three inches square, in which are delineated, as small islands, Europe, England, France, Holland, Portugal and Africa. Holland is as large as all the rest, and Africa is not as large as the end of one's little finger! The northern frontier is Russia, very large. The left corner at the bottom, is occupied by "the western ocean," as it is called, containing the Malay peninsular, pretty well defined. Along the bottom are Camboja, Cochin China, &c., represented as moderate sized islands; and on the right is Formosa, larger than all the rest put together. Various other countries are shown as small islands. I should have given an engraving of this curious map, but that a true reduction to the size of a page would have left out most of these countries altogether! The surrounding ocean is represented in huge waves, with smooth passages, or highways, branching off to the different countries, or islands, as they represent them. They suppose that ships which keep along the highways go safely; but if they, through ignorance, or stress of weather, diverge, they soon get among these awful billows, and are lost!

Malcom's Travels.



Map of the Oregon Territory.

OREGON TERRITORY.

THAT extensive portion of North America, called Oregon, lying west of our states and territories, extending to the Pacific ocean and included within the latitude of forty and forty-nine degrees, and particularly that portion lying west of the Rocky Mountains, is daily assuming additional importance to a large portion of the commercial world. That section of Oregon watered by the Columbia river and its tributaries, is a subject for dispute between this government and Great Britain, in consequence of antagonist claims to possession, founded on alleged priority of discovery. But the history of the discovery and permanent occupation of this region, as well as the spirit of solemn treaties, clearly proves that Great Britain has no more right to this territory than she has to one of the States of our confederation.

In the treaty between the United States and Spain, concluded February twenty-second, 1819, the latter relinquishes all claims to the country north of forty-two degrees. The southernmost point to which the claims of Russia extend, was fixed by her treaty with Great Britain in 1825, at fifty-four degrees, forty minutes. The space included between those boundaries is the region in dispute, and the validity of the claims of the United States has never been questioned except by Great Britain.

The treaty of Ghent provides that all settlements, territories, &c., taken by either party during the war should be restored, and in this stipulation, the United States' settlement of Astoria at the mouth of the Columbia river, was included. By the convention of Great Britain of 1818, it was stipulated that east of the Rocky Mountains and west of the lakes, the boundary between the possessions of the two governments should be the forty-ninth parallel of latitude, and that the territory west of the Mountains should be free and open for vessels and citizens of both powers, for ten years, without prejudice, however, to the claims of either government.

In 1823, so important did the occupation of this region appear, that negotiations were entered into between the two governments for the permanent settlement of the boundary line. But when our minister, Mr. Rush, presented the facts for establishing our claims, the British commissioners

controverted all, and declared that Great Britain considered the whole of the unoccupied portion of North America as open to her future settlement, and rested this claim chiefly on alleged priority of discovery. The negotiations ended in 1827 by extending the arrangement of 1818 indefinitely, allowing each party to abrogate it, by twelve months' notice. This is the position of this matter at the present, and it is to the permanent settlement of the boundaries of this territory that the attention of the two governments is directed.

So far as regards priority of discovery, it is admitted by both parties that the Columbia river was unknown to them previous to the year 1792. In the negotiation opened in 1823, Great Britain supported her claims on the alleged discovery of this region in 1578, by Sir Francis Drake. But the British commissioners always declined stating this pretension in writing, though urging it with energy, verbally. But they could produce no evidence having any appearance of probability, that Sir Francis Drake saw the entrance to the Columbia river, or that he landed any where south of Nootka sound, or the parallel of forty-eight degrees.

But the treaty of Paris in 1763, precludes all claims of priority on the part of Britain, previous to that date, for in that treaty, she renounced all claim to any portion of North America west of the Mississippi. Since that time, no events connected with British discoveries can give her the least title. In 1513, Balboa discovered the western shores of America, and took possession in the name of the King of Spain. Cortez explored the coast up to thirty degrees in 1526; in 1543 Cubrillo extended these discoveries to forty-two degrees, and in 1592, de Fuca discovered the strait which bears his name in latitude forty-eight degrees. All north of forty-two degrees Spain has give up to the United States by treaty; and as "discovery accompanied with subsequent and efficient acts of sovereignty or settlement are necessary to a title," is urged by Britain; and as "the discovery of the mouth of a river gives to the discoverer right to the country watered by the river and its tributaries," we think the title of the United States to the territory claimed, is as clear as that of Great Britain to any of her foreign possessions.

According to documents whose authenticity cannot be controverted, Captain Robert Gray, in the ship Columbia, from Boston, sailing under the flag of the United States, entered the mouth of a large river on the western coast of America near the forty-sixth parallel of latitude, on the seventh of May, 1792, which was the first time, (no evidence to the contrary being on record) it was seen by a citizen of a civilized nation. Here he anchored, and with a small boat proceeded to the land. He named the harbor, Bullfinch's harbor; called the river, Columbia, after the name of the vessel and his country, and named the cape on the north side, Cape Hancock, and on the south, Point Adams. After exploring the channel at the entrance of the harbor, he weighed anchor on the 14th and proceeded about fifteen miles up the river, where he remained till the morning of the twenty-first of May, trading with the natives and making observations of the shores on either side. Thus in 1792, the Columbia river was discovered from the sea and named by a citizen of the United States.

In 1803 our goverment fitted out an expedition to explore the region of the Rocky Mountains west to the Columbia river. This expedition was successful and opened to the civilized world the vast and fertile region of the Upper Missouri, and the rich plateaus in the vicinity of the Rocky Mountains. This expedition was followed by that of Lewis and Clarke, and a settlement and occupation near the mouth of the Columbia river, by John Jacob Astor, a resident of New York city. This settlement, called Astoria, was included in the stipulations of the treaty of Ghent, as before mentioned. Thus it will be seen that the United States has a clear title to the territory she claims on the ground insisted upon by Great Britain that "discovery accompanied with subsequent and efficient acts of sovereignty or settlement, are necessary to a title."

The chief advantages which our government would derive from the occupation of the territory are:—a vast Indian and fur trade, with an uninterrupted intercourse between the valley of the Mississippi and the Oregon; it would open a direct trade with China, Japan and the Sandwich and other islands of the Pacific; presenting some of the finest harbors on the western coast, it would afford places of security for the American whalers in the Pacific, numbering more than eight thousand men, with twelve million dollars worth of property afloat, now left exposed to every foreign power with whom we might be at war; and it would be the means of neutralizing British influence over the Indian tribes and close up a vast and unguarded frontier by which these tribes might swarm into our country under the British flag, in case of war with that government.

In a commercial point of view the occupation of this country by our government is of the greatest importance, and it is this view of the case which makes Great Britain so anxious to retain, or rather gain, possession. Many years will not elapse, probably, before a ship-canal will be cut across the Isthmus of Darien, by which the whole trade of the eastern world will be changed and the future seaports on the western coast of

America will become the great marts of export and import to and from India and the South Sea islands. It is therefore the policy of Britain to maintain a foothold whence such great advantages will accrue; and it should be the wise policy of our government to do the same. By the researches of Lewis and Clarke, and more recently of Colonel Dodge, we learn the important fact that passes of very gentle declivity traverse the range of the Rocky Mountains, making the transportation of merchandise over them, by no means a great undertaking. If then we can have undisputed possession of the Oregon—the Indian tribes be conciliated—roads constructed and the passage over land to the nearest navigable point of the Columbia river, be made easy and secure; a direct route would be opened to India and present to the commercial enterprise of our country, now in its infancy, a channel into which a large portion of the commerce of the east might be drawn.

The security of our frontier settlements is one great advantage to be derived from the occupation of this territory, for if it should fall into the possession of England, she might, in case of war, send into our western states a vast power which might jeopard the independence of our republic. It is well known that her settled policy is to secure the friendship of the Indian tribes, and this she does through the medium of the Hudson's Bay Company. Every year she distributes arms and ammunition among the tribes, from the St. Lawrence to the Columbia, and this friendship influences the whole of the heterogenous mass of population,that fills the deep glens and rolling prairies of the regions of the Rocky Mountains.

Of the nature of this population, Washington Irving, in his "Astoria" remarks:—"Some portion of the wilderness along the rivers may partially be subdued by agriculture; others may form vast pastoral tracts, like those of the east; but it is to be feared that a great part of it will form a lawless *interval* between the abodes of civilized man, like the waters of the ocean or the deserts of Arabia, and like them be subject to the depredations of the marauder. Here may spring up new and mongrel races, like new formations in geology; the amalgamation of the 'debris' and 'abrasions' of former races, civilized and savage; the remains of broken and almost extinguished tribes; the descendants of wandering hunters and trappers; of fugitives from the Spanish and American frontiers; of adventurers and desperadoes of every class and country, yearly ejected from the bosom of society into the wilderness. We are contributing, incessantly, to swell this singular and heterogenous cloud of wild population that is to hang about our frontier, by the transfer of whole tribes of savages from the east of the Mississippi to the great wastes of the far west; many of these bear the smart of real or fancied injuries; many consider themselves as expatriated beings, wrongfully exiled from their hereditary homes, and the sepulchres of their fathers, and cherish a *deep* and *abiding* animosity against the race that has dispossessed them. Some may gradually become pastoral hordes, like those rude and migratory people, half shepherd, half warrior, who, with their flocks and herds, roam the plains of upper Asia; but others, it is to be apprehended, will become predatory bands, mounted on the fleet steeds of the prairies, with the open plains for their marauding ground, and the mountains for their retreats and lurking-places."

We shall continue this subject in our next number, and give a detailed description of the topography and natural resources of this important region of the American continent.

[Original.]

ENCOURAGEMENT TO YOUNG MEN.

BY S. G. ARNOLD.

THE celebrated Hannah More tells a beautiful story of an old clock, which suddenly came to the resolution to stop ticking, in consequence of having thought over the vast number of ticks which it would be obliged to make in a given time; but which was induced to resume its accustomed labor, on learning that although it was required to make such an incredible number of strokes, yet a certain amount of time would always be given for a tick, and although a thousand strokes might be thought of in a moment it would not be required to accomplish them in many hours.

Now it has often appeared to me that young men are discouraged from making those exertions which are necessary to success in playing the great drama of life, by precisely the same reasons which governed the farmer's old clock. When they look forward to the toil, privations, and self-denial which are required to obtain knowledge and distinction, they are startled at the sight and, although many of them set out with the best intentions and the most praiseworthy ambition, yet as soon as they find that knowledge is not obtained by intuition, but is the result of hard and incessant toil; they weary in the way of well doing, and, like the old clock, soon become *tired of ticking*.

There is another class of young persons who seem to be impressed with an idea that the mantle of greatness, like the dew of heaven, falls upon the gifted sons of genius unasked and unsought—that it is not so much the result of effort as of fortune—and, deeming it beyond their reach, they fail to put forth those exertions which are absolutely requisite to success, and without which they can never attain to any high degree of ex-

cellence, however liberally they may have been endowed by nature. This is a delusion which cannot be too soon dispelled. An honorable distinction is purchased only by toil and self-denial—by painful vigils and persevering efforts. It requires the same steady and unceasing application which was exhibited in the pendulum of the farmer's clock, and, like that clock, it will be well for all our young friends to reflect that although many *ticks* must be made before they arrive at the consummation of their hopes, yet a moment will always be allowed for the accomplishment of each *tick*.

I know many complain that they have not time—that they are obliged to labor for their bread—that Providence has denied to them the means of storing their minds with knowledge. But is this really true? Is it not rather true that most young men waste the time which has been abundantly provided for the cultivation of their minds, in the polluting haunts of dissipation—in scenes of idleness and self indulgence—in the vanities and follies of fashionable life? Is it not true that they squander their time in a most wanton and wasteful manner without any just appreciation of its value or any apparent knowledge of the mighty results which would follow its careful improvement?

Look at the example of that persevering young man, William Cobbett! Born of poor and obscure parents, he was brought up without education, and at the age of twenty was scarcely able to read intelligibly. At this time, or soon after, he ran away from home, and found himself in London with only half a crown in his pocket. He however fortunately found employment, and devoted his spare moments to the improvement of his mind, and at the end of a year had read all the books of a circulating library, to which he found means to subscribe, and had made himself a very fair writer. After this he enlisted as a soldier and came to America, where he underwent many hardships but amid them all, obstinately persevered in the cultivation of his mind; and in the tumult and bustle of a camp, commenced and completed the study of the English grammar.

By such means it was that Mr. Cobbett became one of the most powerful and voluminous writers of the age, and finally, raised himself to a seat in the British Parliament. By such means the poor unlettered boy, without relations and friends, while a private soldier, and on a pay of sixpence per day, laid the foundation of a name which is not soon to be forgotten. His bed was his study, his knapsack was his bookcase, a board laid across his lap was his writing-desk, his time the hours redeemed from the duties and bustle of a camp. Even to buy a pen or a sheet of paper, he was obliged to forego some portion of his daily food, already narrowed down to a scanty pittance, and to obtain light for the evening was utterly impossible; yet, amid all these difficulties, Mr. Cobbett found means to progress in his pursuit after knowledge and to lay the foundation of his subsequent fame.

The example of Dr. Franklin is but little less instructive. Bred to the trade of a printer, and, from a boy, obliged to labor with his hands for his subsistence, he contrived so to redeem his time, by applying to some useful purpose the hours which others throw away in idleness, that he became one of the most distinguished men of his own or any other age. And the circumstances of Franklin are the circumstances of thousands. He was apprenticed to a regular business, with no other means of support than his daily employment. He felt the same disposition which other young men feel to spend his time and money in the pursuit of what is commonly called pleasure; but the example of men who had, under every disadvantage, raised themselves to respectability, stimulated him to exertion: he denied himself these pleasures—he bought books with his scanty earnings and spent his hours in reading. His industry, punctuality, faithfulness and knowledge, brought him into notice, and, although for many years he continued to labor with no better prospect of distinction than many others, yet he found his reward in continued health, cheerfulness, and happiness, and at length came to be the wonder and admiration of the world.

The case of the celebrated Dr. Adam Clarke affords another instructive example for the encouragement of young men under difficulties. This extraordinary man was of poor but respectable parentage, and started in life without friends or education, and the early part of his course was a constant contention with the difficulties of his position: but the poor and unfriended boy by diligence and a choice economy of time, soon became the companion of the wise and great, and besides being one of the most learned men of his age, was also one of the most extensive and useful authors.

Now if men under such very discouraging circumstances have pressed forward to the attainment of an honorable distinction, why should not others do the same? It is true that, like the farmer's old clock, it requires a constant *ticking*—a constant vigilance lest the half hours and the minutes run to waste; but let no one complain that he has not the time; and especially let him

be careful that he does not throw away half an hour in idleness, because he has not a whole day.

By a proper improvement of time, there is not a young man in our broad and beautiful country, who might not obtain an excellent education, without neglecting his daily business or any important duty; besides laying up for himself a sure and certain store of happiness on which he could draw at any moment of his life, and providing for himself and family, an honorable name and a comfortable livelihood.

Let the application, the unwearied perseverance and noble example of others, stimulate them to exertion. Their facilities of acquiring knowledge are tenfold greater than those of Clarke, or Franklin or Cobbet. Many of them have access to the richest libraries, the most useful and instructive lectures and being mostly occupied only ten hours of the day in their regular business, have abundant leisure for the cultivation of their minds.

It is almost impossible to calculate the amount of labor which may be performed even in the course of so short a time as is allotted to human life. Witness the volumes of Johnson, Addison, and especially, of Sir Walter Scott. Look at the immense results which were accomplished by the energy, industry, and genius of Napoleon—contemplate the unceasing application of a Wesley, or a Brougham, or a Cromwell, or a Clarke; then ask yourself if you have a right to complain of the want of time.

Let me say once more, then to my young friends, that the path of honor and distinction is before them, and that the considerations are strong for inducing them to walk therein. In our own country, industry never goes unrewarded and a proper improvement of time, while it furnishes you with the means of constant enjoyment, will also, if accompanied by virtue and honor, certainly carry you forward to that distinction which you so ardently desire. But you must among all your discouragements, remember the example of the farmer's old clock, and not get tired of ticking.

WHALE FISHING.

Among the various pursuits of commercial nations, there is none so arduous and dangerous as the fisheries, and especially the whale fishery. Success in it, too, is quite uncertain, when applied to individual vessels, for three years are sometimes spent, and the earth nearly or quite circumnavigated by a crew, and they return home with a simple pittance. Yet where large companies are formed, and many vessels are employed at the same time, it is a business which is sure to give an ample equivalent for all the capital, time, and labor invested.

This trade was for a long time a source of large revenue to the Dutch and English governments, whose fishing region was confined chiefly to the northern seas, in the vicinity of Greenland and Spitzbergen. But the great number of vessels that went annually upon those fishing grounds, disturbed the whales, and they deserted their old haunts for places more secure. The whales found in these regions are called black or right whales, and furnish oil of an inferior quality to that procured from the sperm whale of the Pacific ocean and the south seas.

For many years a great number of American vessels and seamen have been employed in this trade, the largest proportion of which are sent out from Nantucket and New Bedford. They are chiefly engaged in the sperm fishery; and it is estimated that in the Pacific there are now upward of eight thousand American seamen employed in this business.

The manner of taking whales is as follows:—as soon as one is discovered by his blowing or spouting, the boats are got out, and each manned with six or seven men. These boats are so constructed that they dart over the water with great speed, and are managed with ease and facility.

Form of a Pacific whale boat.

They row till they come near the whale when the harpooner, standing in the bow, strikes it with a harpoon near the snout, or the fore fin. In an instant the whale darts off, sometimes near the surface, at others diving many fathoms toward the bottom. Care is then taken to give it plenty of line, and as it sometimes run out more than the whole length of the line, (upward of two hundred fathoms) a man stands ready to cut it, otherwise the boat would be drawn under. So rapidly does the whale proceed, that it is necessary to wet that part of the boat over which the line passes, to prevent the friction from setting it on fire.

Whales are so much amphibious in their nature, that they cannot remain a very long time below water, but come up to breathe. This being the case, they frequently receive a second and even a third harpoon, before the fatal blow is given. These second attacks are the most dangerous to the whalers, and frequently, boats are destroyed by the *flukes* of the fish, when it is rendered furious by pain.

The fat whales do not sink as soon as dead, but the lean ones do, and come up some days

afterward, when they are towed to the side of the ship, and the blubber or part containing the oil is detached from the carcass and taken on board. The bone is then secured and the carcass sent adrift.

The imminent danger to which whalers are exposed, is represented in our engraving, and well described in the following sketch from the pen of Captain Marryatt. It is a part of a long yarn, spun by an old tar :—

"Well, we had waited about half an hour, when we saw a whiff at the mast-head of the ship; we knew that it was to direct our attention to some other point, so we looked round the horizon, and perceived that there was a 'school' of young bulls, about three miles from us. We were four boats in all; and the first mate desired my boat and another to go in chase of them, while he remained with the other two, for this old whale to come up again. Well, off we went, and soon came up with the school: they are the most awkward part of whale fishing; for they are savage, and, moreover, easily 'gallied,' that is, frightened. I picked out one, and tried to come up with him; but he was very shy, and at last he raised his head clean out of the water, and set off at the rate of ten miles an hour; this showed that he was aware of danger. I had just thought of giving him up and trying for another, when he suddenly turned round, and came right toward the boats. That we knew meant mischief; but, in coming toward us, he passed close to the other boat, and the steersman gave him the harpoon right well into him. This made him more savage, and he stood right for my boat, ploughing up the sea as he rushed on. I was all ready in the bow with the harpoon, and the men were all ready with their oars to pull back, so as to keep clear of him. On he came, and when his snout was within six feet of us, we pulled sharp across him, and as we went from him, I gave him the harpoon deep into the fin. "Starn all!' was the cry as usual, that we might be clear of him. He 'sounded' immediately, that is, down he went, head foremost, which was what we were afraid of, for you see we had only two hundred fathoms of line in each boat; and having both harpoons in him, we could not bend one to the other, in case he 'sounded' deep, for sometimes they will go down right perpendicular, and take four lines, or eight hundred fathoms with them; so we expected that we should this time lose the whale as well as our lines, for when they were run out, we must either cut, or go down with him. Well, the lines ran out so swift, that we poured water on them that they might not fire—and we thought that it was all over, for the lines were two-thirds out, and he was going down as fast as ever, when all of a sudden he stopped. We were hauling in the slack lines, when we saw him rise again, about a quarter of a mile off. It was a hurrah, for we now thought that we had him. Off he set with his nose up, right in the wind's eye, towing the two boats at the rate of twelve miles an hour; our stems cleaving through the sea, and throwing off the water like a plume of feathers on each side of the bows, while the sun's rays pierced through the spray and formed bright rainbows. We hoped soon to tire him, and to be able to haul in upon our lines, so as to get near enough to give our lances; but that was only hope, as you'll hear. Of a sudden, he stopped, turned round, and made right for us, with his jaws open; then, all we had to do was to baulk him, and give him the lance. He did not seem to have made up his mind which boat he would attack—we were pretty near together, and he yawed at one, and then at the other. At last he made right for the other boat, and the boatsetter dodged him very cleverly, while we pulled up to him, and I put the lance up to the stock into his side. He made a plunge as if he were going to 'sound' again; and as he did so, with his flukes he threw our boat into the air, a matter of twenty feet, cutting it clean in half, and one of the boat's thwarts came right athwart of my nose, and it never has been straight since. So now you have it, messmate; and I shouldn't mind if you passed the beer this way, for this long yarn has made my throat somewhat dry."

"When you've had your swig, old chap, you may as well tell us how the matter ended," observed my father.

"Why it ended in our losing the whale in the first place, and the boat with her gear in the second. We were picked up by the other boat, and there was no time to be lost, for the sharks were brought together by the scent of the whale's blood; the whale sounded again, and we were obliged to cut the line, and return on board."

HOROLOGY.

Horology, or the art of measuring time by hours, minutes and seconds, was known and practised in very early times; but for its connexion with correct mechanism we are indebted to the monks of the middle ages. The word *horologium* was in use among the ancients, which fact has led many to infer that mechanical contrivances similar to our clocks, were then in use. This inference is doubtless erroneous, since no ancient writer ever alludes to an instrument of that kind. The *pillar*, the engraved *dial*, the *clepsydræ* and the *hour-glass* were the only horologii known prior to the sixth or seventh century

Pillars, the length, inclination and return of whose shadows, indicated the progress of time upon the level surface around their bases, were doubtless the first time-measurers. It is believed, (although we have no positive evidence of the fact) that the obelisks of Egypt were used for this purpose; and some have hazarded the opinion that the pyramids were also put to the same use, as their four sides correspond precisely with the cardinal points of the compass. It is certain that pillars were used in Greece for this purpose; and

as Augustus thus used the Egyptian obelisks which he carried to Rome, this fact may be taken as *circumstantial* evidence, that for this purpose they had been devoted when first reared.

These huge *dials* were succeeded by those of a more portable kind. The invention of the dial proper, is conceded to the Babylonians, although the first mention of one on record, refers to a famous one that belonged to Ahaz the Jewish king, who reigned about seven hundred years B. C. "And Isaiah the prophet cried unto the Lord: and he brought the shadow ten degrees backward, by which it had gone down in the dial of Ahaz." II. King xx. 11. As the Jews were by no means an inventive people, it is supposed that Ahaz procured this horologium at Damascus, where he obtained an altar and other curious things.

Of the construction of this dial we have no certain means of determining, but it is probable that it was similar to that introduced to the knowledge of the western nations by Berosus the Chaldee. The Rabbins say that it was a concave hemisphere, in the middle of which was a globe, whose shadow fell upon twenty-eight lines engraved upon the cavity. This description accords with that of one attributed to Moses by Apion. He says that Moses made a cavity and near it set a pillar, the shadow of whose top fell into the cavity and passed round it with the sun, thus marking the hours. Josephus pronounces this relation of Apion, false. Anaximander, who first introduced the dial into Greece, obtained a knowledge of it in Chaldea, about the time of the Jewish Captivity. The dial of this traveller not only marked the hours, but the equinoxes, the solstices, and by their means, the seasons. Such dials were used by the Egyptians, and though chiefly employed as equinoctial dials in astronomical calculations, yet they were used for horary indications. All of these were hollow or hemispherical, as represented in Fig. 1 of our illustrations. This dial was found at Ravenna, about one hundred years since, and appeared mounted on the shoulders of a Hercules.

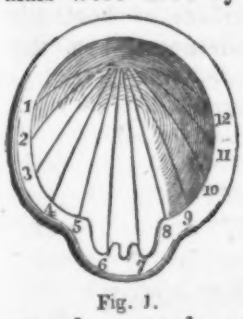


Fig. 1.

Fig. 2.

Figure 2. represents a large marble sun-dial once upon the point of a rock near the monument of Thrasyllus at Athens. It is supposed by some to represent the one whose invention is attributed to Berosus, beforenamed, who lived in the time of Alexander; while others, guided by the meager remarks of Vitruvius, (who, in speaking of the dial of the Chaldean, calls it a *hemicyclium* or half-circle,) believe that either of the two following figures better represents the dial of Berosus.

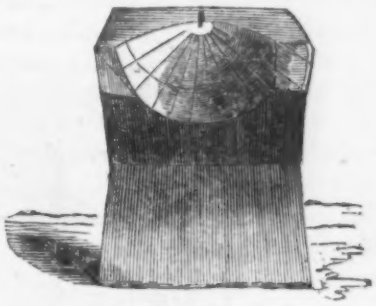


Fig. 3.

Figure 3 is copied from the "Antiquities de Herculaneum" and represents a dial formed of white marble, supposed to be of Etruscan construction. It was found at Civita in 1762. It is one of the most primitive class, and like fig. 4. so

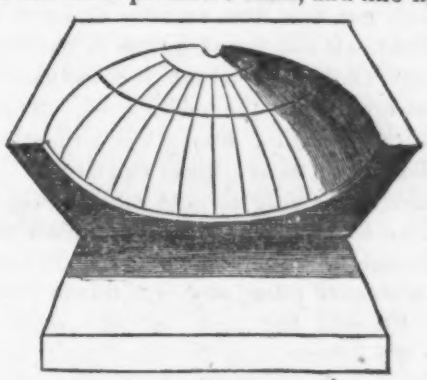


Fig. 4.

nearly resembles those of Chaldea, that most antiquarians agree that these, the dial of Berosus, and the dial of Ahaz, are all the same in form.

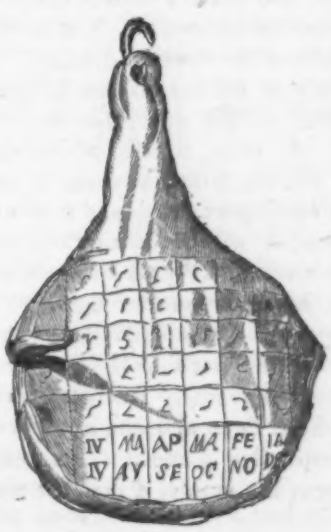
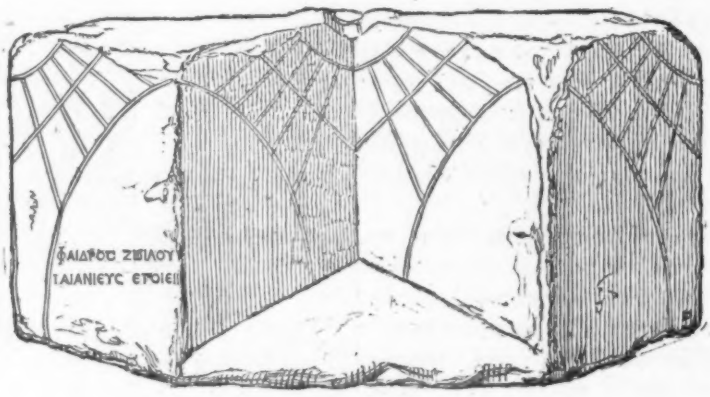


Fig. 5.

Our fifth illustration represents a singular kind of dial which was used by both the Greeks and Romans. How antique its origin is, we cannot determine. This was found at Herculaneum, in 1754, and in 1755, a similar one was dug up at Portici. The one represented in our engraving, is in the form of a ham, the tail serving as a gnomon or object for casting a shadow, and having at the extremity a hook or ring for suspending it. The dial is on the back of the ham, where seven vertical lines are engraven, under which, in abbreviation, are the names of the twelve months, commencing with January. Six horizontal lines intersect the vertical ones and show the extent of the shadows cast by the gnomon on the sun's entering each sign of the zodiac. The hours of the day are also pointed out by these intersections, the shadow descending with the rising and ascending with the setting sun.

Our last illustration represents a compound



Compound dial of Athens.

dial, which exhibits dials on four different faces of the stone. It was found at one of the ancient cross-ways of Athens, where it is supposed to have been erected for the public good. It is now in the British museum among the collection of antiquities known as the Elgin marbles.

We have space only to give the general rules to be observed in the construction of dials, which are applicable to them all. Suppose 12 planes, making with each other, angles of fifteen degrees, passing through the axis of the earth and dividing the sphere into 24 equal parts, one of these planes being the meridial of the place of the observer; commence from the meridian and, moving toward the west, number these planes 1, 2, 3, 4, &c, up to twelve, which will be the lower meridian of the place; commencing from this point, number as before, 1, 2, 3, &c., to 12, which will now fall on the upper meridian. These will form a series of horary circles, in passing from one of which to the next, the sun will occupy one hour. At noon it will be on the meridial numbered 12; an hour previous it was on the last horary circle preceding, and it was 11 o'clock; an hour after, it will be on another circle representing 1 o'clock and thus it proceeds till the time of setting, and commences again at its rising. Suppose now an opaque plane, passing through the centre of the earth, and intersected by the twelve planes in as many diverging straight lines, and mark these lines with the numbers belonging to their respective planes. This opaque plane will represent the face of a dial, the straight lines will form the horary lines marked on its surface, and the style, or gnomon, will represent the axis of the earth, and will project its shadows successively on each of the hour lines, the number affixed to which will shew the hour of the day. This is the theory of dials; and one calculated for any given place, will serve for any other place under the same meridian, provided its position in the latter place be parallel to its position in the former place.

In our next we shall describe and illustrate the *Clepsydræ*, or water-clock, and the *hour-glass;* and trace the progress of the science of horology from those, to the perfect chronometer of the present day.

(To be continued.)

[Original.]

POLITICAL ECONOMY.—No. I.

BY M. WILSON, ESQ.

Political Economy is the science which treats of the nature of individual and national wealth—of its creation—of its distribution among the original producers, so that each may have his just share of the value which he has assisted in creating—of its exchange among the members of society—of its consumption or destruction—and, finally, of the effects of these several circumstances upon national prosperity. The science

of political economy is composed of a few fundamental principles, and of a great number of corollaries, or conclusions drawn from them. The numerous errors that have arisen in this science, and the diversity of opinions promulgated, have, in most cases, been owing to the unphilosophical manner in which the writers upon this science have pursued their investigations. They have too often commenced with hypotheses which their imagination, rather than their reason, soon converted into axioms, or first principles, to which they endeavoured to accommodate the facts which they had gathered, and, from their application, to deduce the more general principles of wealth and the laws of commercial intercourse. But it is essential to the advancement of any science that its principles be first deduced from accurate and extensive observation, and then, should erroneous deductions sometimes be made in the conclusions drawn from them, or from the hasty generalization of a too limited number of facts, the various discrepancies arising will soon refer them back for correction to the first principles of the science. But if these first principles be erroneous, it may readily be imagined that, from an application to them of dissimilar facts, the deductions will originate systems as contrary to the nature of things as they are discordant with each other. After legitimately establishing the fundamental principles of political economy, the number of conclusions to be drawn from them may be multiplied almost *ad infinitum;* but as the science becomes better understood, there will be less occasion to deduce consequences from its principles, as these will present themselves almost intuitively to every one who wishes to make the application. And when this science shall have been studied in our schools, and its principles become familiar to the great mass of the community, a practical treatise on the subject will be confined to the enunciation of a few general principles, not requiring even the support of proofs or illustrations. Volumes, however, have been written in support of different systems of political economy, but, until the publication of Adam Smith's "Wealth of Nations," in 1776, the science of political economy, as such, where all was confusion and chaos, could hardly be said to exist. The writings of this individual, however, have produced from this chaos a new creation of primary and now indisputable principles, and have plunged a still greater number of extravagant hypotheses, and vague opinions, into total abandonment, never to be revived again.

The science of political economy, however, cannot yet be considered perfect; and indeed the subject is such as will not admit of mathematical accuracy in its details; for, the *values*, with which political economy is concerned, being subject to the influence of the faculties, the wants, and the desires of mankind, are not susceptible of rigorous appreciation. But the period of controversy respecting the fundamental principles of the science has already passed, and a very general unanimity now prevails among the writers upon this subject, although most commercial nations still adhere, in practice, to some errors that have long been abandoned in theory. We shall here briefly advert to that system of political economy which has exerted the greatest influence upon government regulations, and which, although now deemed erroneous by political economists, legislators have found it difficult entirely to abandon. An examination of this system will give us the best general view of the history of the science, and enable us the better to appreciate its importance.

The supporters of the *Commercial* or *Exclusive System*, believed that money, or, in other words, gold and silver, constitute, if not wholly, yet nearly, the entire wealth of a nation. Their opinions probably arose out of the extensive use that is made of money, by its being the chief instrument of commerce, the possession of which enables a person to obtain whatever other commodities he may desire. For when money is obtained there is no difficulty in making any subsequent purchase, and a wealthy nation, as well as a wealthy individual, was supposed to be one abounding in money; and to heap up gold and silver in a country was, therefore, thought to be the readiest way of enriching it. These erroneous opinions gave rise, at one time, on the part of most European governments, to a policy that has been prejudicial in the extreme to the interests of the people, and, indeed, to the governments themselves which adopted it. Spain and Portugal, the proprietors of the principal mines in the world, believing that the accumulation of gold and silver, was the surest means of enriching a country, prohibited the exportation of the precious metals under the severest penalties; and the same policy was at one time adopted by France, and England, and by most other European nations. When, however, these countries became extensively engaged in commerce, the prohibitions upon the export of gold and silver, became productive of serious evils to the mercantile interests. But notwithstanding the severity of the laws, gold and silver continued to pass from one country to another, as the interests of trade directed; and it was found that no prohibitions could prevent their exportation, when people found any advantage in exporting them. But still there was a penalty, and a forfeiture, attached to the detection of those who were found engaged in this smuggling. The merchants, being the first and the most seriously affected by these prohibitions, remonstrated against them as injurious to the interests of trade, and although they

still entertained the idea that the wealth of a nation consists in its gold and silver, they endeavored to prove that the exportation of those metals did not ultimately diminish the quantity in the kingdom. The English merchants, for example, represented that they did a great portion of the carrying trade for other nations—that they purchased large quantities of foreign goods for the purpose of selling them abroad at a profit—and that, as they gave less than they received in return, and as, by being allowed to export gold and silver for the purchase of them, they could obtain them at a reduction of price, the disposal of them abroad, to other countries, would return to England a much larger amount of gold and silver than was required to be exported for the purchase of these goods. They represented, secondly, that this prohibition could not prevent the exportation of gold and silver, which, from the necessity of the case, must flow wherever there is the greatest demand for, and the means of obtaining them; and that the only method of preventing their excessive exportation was a proper attention, on the part of government, to what they called the *balance of trade*. For, when a nation has exported to a greater value than it has imported, a balance becomes due to it from foreign nations, which must generally be paid in gold and silver; and this consequently increases the quantity of precious metals in the country which has the balance of trade in its favor.

These arguments of the merchants produced in part, the desired effect, and the exportation of *foreign* coin and bullion, was made free in France and England, while the prohibition against exporting the coin of those countries was still retained. In Holland, and in some other countries, this liberty was extended both to foreign and domestic coin. But neither the people nor the governments, had yet relinquished their favorite theory, that the wealth of a nation consists in its gold and silver—they had merely adopted what they deemed a more enlightened policy, for placing their system upon a firmer basis. The attention of governments was then turned away from guarding against the exportation of gold and silver, and directed to the regulation of the balance of trade, as the only cause that could occasion any permanent augmentation or diminution of the precious metals. The inland trade—the domestic commerce of a country—by far the most important of all, as it gives employment to the greatest amount of capital and industry, was considered as subsidiary only to foreign trade; and to preserve the balance of trade in favor of a country, became the fundamental policy in the political economy, not of England only, but also of all other commercial countries.

The two principles, therefore, being established, first, that wealth consists exclusively in gold and silver; and, secondly, that the only means of bringing and retaining the precious metals in a country, is by keeping the balance of trade in its favor; or, in other words, by importing to a greater amount than it exports—it necessarily became the object of government regulations to diminish, as much as possible, the exportation of the products of domestic industry. In accordance with this system, although deemed, by political economists, radically erroneous, and productive of great evils to the country adopting it, restraints upon importation, and encouragements to exportation, have formed a part of, and still exercise a powerful influence over, the permanent policy of all the commercial countries of Europe. The restraints upon importation have consisted sometimes in high duties upon foreign goods, and sometimes in absolute prohibition; while exportation has been encouraged by drawbacks—by bounties—by advantageous treaties of commerce, and sometimes by the establishment of colonies in distant countries. From the adoption of these several methods for increasing exportation, and diminishing importation, it is evident that the partizans of this system looked upon nothing that a nation receives from abroad as a national gain, except what it receives in the form of specie; which would be, in effect, to maintain, that a nation which produces a surplus of wheat beyond its own wants, gains nothing in wealth or value, by exchanging the surplus for cotton or woollens, of which it stands in need. But furthermore, it must be evident that the more lucrative external commerce is, the greater must be the excess of the imports above the exports; and thus the very thing which the partizans of the exclusive system deprecated as a calamity, is, of all things, to be desired. If the value of the exports is merely equal to that of the imports, the nation has certainly gained nothing in the amount of wealth, while the whole cost of the transport to and from the country, has been a total loss. But when there has been an export of twenty millions, and an import in return therefor of thirty millions, there is in the nation a value of ten millions more than before the interchange. A similar result must always be the case, otherwise the traders would gain nothing. But notwithstanding this simple and practical view of the case, the most unaccountable errors appear to have prevailed on this subject, so far from the truth have the partizans of this system been carried by an error in first principles. From a report of the French minister of 1813, we find that the total exports of France amounted to 383 millions of francs, and the total imports, inclusive of specie, to 350 millions; and the minister felicitates the nation upon this statement, as the most favorable that had ever been presented. But

this statement plainly shows, what was too evil dent from other sources, that the commerce of France was then making immense losses in consequence of the blunders of her administration, and the total ignorance, in her rulers, of the first principles of political economy.

To sum up briefly the principles maintained by the supporters of the Commercial System, we may remark, that they considered national wealth as consisting wholly in gold and silver—as depending, not upon the sum total of the productions of a country, but upon the amount of its sales to foreign countries; they believed that one nation can gain only what another loses; and, finally, they attempted to subserve to their own purposes the causes of national prosperity, when they had no clear or distinct notions of the nature of wealth itself. But although their leading principles have been abandoned by all the most approved writers on political economy, yet many of those artificial encouragements and restraints that arose from the application of those principles, are still retained to some extent by nearly all commercial nations. We shall not attempt, in the present article, to enter into a thorough examination of the commercial or restrictive system, nor to show the tendencies and effects of its several restraints and encouragements, in detail; but whatever their effects may be, it must be apparent to every one that they are instruments capable of exerting an all-powerful influence, for good or for evil, on national wealth and individual prosperity. How important then that those who are intrusted with the adoption or rejection of such engines of power, should be thoroughly acquainted with their nature and tendencies, and how essential that the legislators of a nation, should be versed in those principles of political economy, upon which must be based every enlightened policy for permanently improving the condition of the people.

THE CHINESE ARMY.

The interest excited by recent events at Canton may render some account of the character, organization, estimated force, and discipline of the Chinese army acceptable to our readers. The difficulty, not to say impossibility, in more modern times, of procuring more authentic information on the subject, induces us the more readily to avail ourselves of the details furnished by the enlightened and indefatigable zeal of those, who, toward the close of the last century, were enabled, by the opportunity of then existing circumstances, to penetrate into the interior of a country that has been closed, as a sealed book, to the research of the nineteenth century. When we consider the proverbial disinclination to change of any kind, which is the characteristic and avowed principle of the Chinese government, we need scarcely hesitate to conclude that the lapse of comparatively a few years, has wrought but little alteration in the state of things as they existed at the period to which we have alluded. The events of a century or so—of a period of time, which, with the wavering and unsettled institutions of the rest of the world, might suffice, and has in many instances sufficed to change the entire face, political and social, of states and kingdoms—could vary but slightly, if indeed at all, the circumstances, the arrangements, and habits of a nation which, as is the case with China, boasts of the immutability of its institutions, reckoning its dynasties by thousands of years, as do others by centuries.

The supreme control of the entire Chinese army is vested, under the Emperor, in the five sovereign courts of mandarins-at-arms (*Ou-quan*,) viz. first, *Heou-fou*, or of the rear guard; second, *Tso-fou*, or left wing; third, *Yeou-fou*, or right wing; fourth, *Tchong-fou*, or line-of-battle; fifth, *Tsien-fou*, or avant guard. In these courts of the military mandarins, there are to each a president and two assessors, who are all of them of the first and second degree of the first order, and for the most part puissant nobles, who have the command of the state-officers and soldiers of the palace-guard.

These five classes compose the supreme tribunal called *Yong-tching-fou;* and its president, or chief, is one of his most powerful nobles in the empire, inasmuch as his authority extends generally over all officers and soldiers, whether of the court or of the provinces.

The mandarin commander-in-chief on the part of the Emperor, in the two provinces of *Quang-ton* and *Quang-si*, is termed the *Tsong-tou*. He is also receiver-general of the royal or imperial duties on salt, and of which he renders an account to the *Houpou*, or comptroller of Pekin. He has for his guard, and at his disposition, five thousand of the troops, with a brigadier, four colonels, five lieutenant-colonels, ten captains, and twenty lieutenants. His ordinary residence is at the city of *Tchno-quing*, distance twenty leagues from *Quang-ton*, whither he repairs in cases of importance.

The second great officer is the *Fou-yuen* or viceroy of the province, being at the same time lieutenant-general of police, and receiver-general of customs, as well maritime as inland. His guard is three thousand men, with a brigadier, two colonels, three lieutenant-colonels, six captains, and twelve lieutenants. His residence is at *Quang-ton*.

All candidates for rank or promotion in the army have previously to undergo a strict and searching examination before the *Heo-yuen*, or president-absolute of the examinations, which are held twice in three years, at Quang-ton, and in each city of the first order in the provinces. For the degrees of dignity in the science of arms (*Ou-quan*) the examining mandarin is to exercise his functions with the greatest rigor and severity toward the candidate, without respect for persons, and with no choice save in favor of merit. He is even forbidden to speak with any person what-

ever so long as he holds the appointment of examining mandarin; certain death is the consequence of the last malversation in his office. The examination consists, in the first place, in seeing whether or not the candidates are perfect in the management of their horses: whether they can gallop at full speed, without being thrown; use the bow when sitting firmly and steadily in the saddle, as also at full gallop, in either case hitting their mark. In the second place, they are examined as to whether they are capable of making a short and simple speech or address, but well-conceived and to the point, and without committing a blunder, on such matter as may be proposed to them, relating to military science.

In 1728, the Chinese Emperor had a standing army of upwards of six hundred thousand regular troops. The writer of the letter, from which we have extracted the foregoing particulars, assures the gallant and princely personage to whom it is addressed, namely, Prince Eugene of Savoy, that his Serene Highness, at the head of forty-thousand or fifty thousand dragoons, would nevertheless be able to conquer the whole kingdom of China; and he adds, in so saying, he does not imagine that he is paying him a very high compliment. Before the conquest of China by the Tartars, in 1643, it was a standing jest according to d'Herbelot and other authorities, with the Western Tartars to affirm, in derision of the Chinese, that the neighing of a Tartar horse was sufficient to put the whole of the Chinese cavalry to the rout; and from the same authority we gather that even the Chinese-Tartar cavalry of his time had dwindled pretty much to the same condition. The Chinese themselves seem to have admitted the truth of the charge, but to have met the inculpation of cowardice by affirming that the neighing and snorting of the Tartar war-horse is naturally so frightful in its sound, as to strike a panic and terror into all horses of a different breed.

The Chinese generals divide their troops through all the towns and provincial districts. That of Quang-ton contains ten cities of the first order, nine of the second, and seventy-four of the third, but as in these places of the third order there are some that are mixed up with those of the first and second, only seventy-four walled towns are counted in the province, in each of which, according to its extent and importance, a sufficient garrison is distributed to maintain the people in subjection.

The number of families in this one province—and it must be borne in mind that this is only one, and among the least, of fifteen—is, according to the most recent returns (1728) of the population of China, four hundred and eighty-three thousand three hundred and sixty. That of the men, without reckoning the women or children under twenty years of age, is one million nine hundred and seventy-eight thousand. The whole population of China, as estimated by our authority at about the same period was, ten million one hundred and twenty-eight thousand seven hundred and ninety families, and without reckoning the princes of the blood, the ministers of state, the nobles, the officers, as well of police as the military, the bonzes or priests, the eunuchs, women and children—the number of male inhabitants of the class of the common people, above the age of twenty-one years is computed at fifty-eight million, nine hundred and sixteen thousand, eight hundred, exclusive of a prodigious number of people that live habitually in vessels and rafts, so that the water appears as thickly peopled as the earth. The Portuguese, when, in 1517, they penetrated for the first time into China, astonished at the vast extent of its population, gravely asseverated in the accounts they sent to Europe, that the Chinese women usually bore twelve children at one birth.

This enormous population, however, far from adding strength to the country in times of invasion, would appear to have but conduced to its speedier subjection by a fierce and determined enemy: a circumstance that reminds us of the terrible repartee, attributed to Atilla, the scourge of the West, who, when about to attack, replied, "That the sickle gathered more abundantly in a thickly-sown field than in a thin or barren one."

We have before seen that the Chinese cavalry is not over remarkable for its steadiness in a charge; nor is even that of the Tartars, according to the best testimony, including that of d'Herbelot and Galand—entitled to a very much greater eulogium on the score of discipline. As Cæsar describes the first onset of the Gauls, so is the first charge of the Tartar cavalry characterized by its fierceness and impetuosity: but the slightest check, or failure of sudden or complete success, is sufficient to convert the attack into as sudden a rout and confusion, from which all attempt to rally them is hopeless.

As regards the general government of the army, although the supreme control is, we have seen, vested in one particular court, of which the mandarins composing it are constituted sole judges, yet can no matter of importance be carried into effect without the joint help or mutual concurrence of the other courts of the empire, or, as we should term it, of all branches of the executive. Thus, in the instance of war, the number of their troops, the quality of their officers, the march of the armies, &c., are provided for by the fourth court, but the money to pay them must be had from the second.

The great principle of the Chinese policy is to keep up, in time of peace as well as war, great and well-appointed armies, in order, not only to maintain credit and respect from their neighbors, but also to stifle or rather prevent, any disturbance which may happen at home. Heretofore a million of soldiers were set to guard their great wall; a less number than that also, to garrison their frontiers and great towns would have been too little; now they think it enough to keep garrisons in their most important towns. Besides these standing forces there are fifteen thousand or twenty thousand men in each province, under the command of private officers; they have also soldiers to keep their islands, especially Haynan and Formosa.

Their soldiers are tolerably graceful in appearance, and pretty well disciplined, for the Tartars have almost degenerated into Chinese; and the Chinese continue, as they always were, soft, ef

feminate, enemies of labor, and better at making a handsome figure at muster or in a march, than at behaving themselves gallantly in action. The Tartars begin with heat and briskness, and if they can make their enemies give ground in the beginning, then they can make their advantage of it; otherwise they are unable to continue an attack for any length of time, or to bear up long against one, especially if made in order, and with vigor. The Emperor himself (Cam-Hy, a great favorite by the way, with the missionaries) gave this short character of them:—"*They are good soldiers when opposed to bad ones, but bad when opposed to good ones:*" an eulogium with which, we presume, the faithful warriors of his Celestial Majesty were, as in duty bound, considerably flattered.

The rations of the troops in garrison, consist of meat, fish, rice, peas, and straw, according to every one's rank, and which are served out to them daily, besides their constant pay, which they regularly receive. In Pekin, the military magazines of reserve are kept constantly stored with rice sufficient for three years' consumption. This rice, it appears, will keep a great while if it be well fanned and mixed; and though it is neither in appearance nor taste comparable to new rice, yet it is much more wholesome and nourishing.

The few additional details respecting the numbers and discipline of the Chinese army furnished by more modern travellers, would lead to the conclusion, that the Chinese army at the present day consists of about one million infantry and eight-hundred thousand cavalry, a statement pretty nearly agreeing with that brought to Europe, by the gentleman who accompanied the first English embassy to China under Lord Macartney. These numbers are inclusive of the Tartar banners. From the observation made by the embassy in their travels through the empire, there seemed nothing improbable in the calculation of the infantry, but they observed few cavalry. The pay of the Chinese foot soldier amounts to about 2½d. English money and a measure of rice per day, though some of them have double pay. The pay of a horse-soldier is double that of a foot-soldier; the Emperor furnishes a horse; and the horseman receives two measures of small beans for its daily subsistence. The arrears of the army are punctually paid up every three months. A horseman's arms consist of a helmet, a cuirass, lance, and sabre; the foot-soldier is armed with a rude and indifferent construction, while others have bows and arrows. All these arms are carefully inspected at every review, and if found in the least rusted, or in bad condition, the inattentive soldier is instantly punished—if a Chinese, with thirty or forty blows with a stick; if a Tartar, with as many lashes.

As to the naval force of the Chinese, it would appear from the most modern accounts that it has undergone no change whatever during the last two hundred years. A late writer has declared that a single British man-of-war would suffice to destroy the entire naval force of China.

THAT life is long which answers life's great end; virtue, not rolling suns, matures the mind.

INITIAL LETTERS.

UMEROUS as were the illuminated manuscripts from the 8th to the 15th centuries, but few are now remaining and these are either locked up in the cabinets of the curious, or are to be seen by the public only in museums and picture-galleries.

The art of adorning manuscripts prior to the invention of printing, with curiously-wrought initial letters, was first practised to a considerable extent, about the middle of the fifth century. Embellishments were used much earlier than this, for Pliny speaks of books or rolls illustrated with pictures. Pomponius Attius, having made a collection of the wise sayings of the most eminent men of Rome, employed an artist to embellish his work with their portraits.

There is in the Vatican a manuscript copy of Virgil, profusely adorned with miniatures, supposed to have been executed about a century after that poet's death. In the Vatican is also a manuscript of Terence, adorned with representations of different scenes in the plays, and a portrait of the author. This is supposed to have been done antecedent to the time of Constantine. Many other manuscripts of about the same date are mentioned by early writers, but when, in the third and fourth centuries, literature declined, this art also disappeared, except so far as it reflected the Gothic character of the writings of the dark ages.

During the middle ages, when the world was wrapped in a profound sleep of ignorance, the lamp of learning burned feebly within the cloister; and the monks whose whole time was devoted to literature and religion, preserved it from extinguishment, and nurtured the fine arts. In the monasteries were chambers set apart exclusively for the purpose of transcribing and illuminating manuscripts; and there, during the day, and even at midnight, when not engaged in spiritual duties, the devoted enthusiast would labor in the production of beautiful specimens of the calligraphic and pictorial art. It is astonishing to witness the varied taste displayed in many of the initial letters, which preface some of the manuscripts of the eleventh and twelfth centuries.

Although books were embellished with pictures prior to the seventh century, yet it was not till

that time that the practice of making the first letter of a manuscript a significant picture, was adopted. From the seventh to the eleventh century, they were frequently drawn of large dimensions, varying from three and four inches to a foot in height. The composition of these letters was usually in the arabesque style, splendidly colored, though frequently they displayed designs significant of the subject of the manuscript. The cut at the head of this article is a representation of one of the latter class, being the initial letter in the first word of the Book of Ruth. As the most eventful portion of that beautiful narrative relates to her acts in the field of Boaz, this letter is embellished with a sheaf of wheat.

When, about the middle of the fifteenth century, printing was invented, the business of the transcriber of manuscripts was destroyed, and consequently the art of embellishing them declined.

HUSBANDS AND WIVES.

THERE is much good sense displayed in the following article from the pen of the editor of the Boston Transcript. If he practises what he preaches his family, no doubt, is a happy one. The "rights of women" are too much neglected in the matter to which he alludes. We commend this brief homily, to the careful study and reflection of those "incompatible" husbands who are ever ready to exclaim with somebody—some crusty cynic:—

> "O woman, woman; whether lean or fat,
> In face an angel, but in soul a—*cat*."

"Walking the other day with a valued friend who had been confined a week or two by sickness to his room, he remarked that a husband might learn a good lesson by being confined occasionally to his house, by having in this way an opportunity of witnessing the cares and the never ending toils of the wife, whose burdens and duties, and patient endurance he might never have otherwise understood. There is a great deal in this thought, perhaps enough for an "*editorial*." Men, especially young men, are called by their business during the day mostly away from home, returning only at the hours for meals, and, as they then see nearly the same routine of duty, they begin to think that it is their own lot to perform all the drudgery, and to be exercised with all the weight of care and responsibility. But such a man has got a very wrong view of the case; he needs an opportunity for more extended observation, and it is perhaps for this very reason that a kind Providence arrests him by sickness, that he may learn in pain what he would fail to observe in health. We have seen recently a great many things said in the papers to wives, especially young wives—exposing their faults, perhaps magnifying them—and expounding to them, in none of the kindest terms, their duty and the offices pertaining to "woman's sphere." Now we believe that wives as a whole are really better than they are generally admitted to be. We doubt if there can be found a large number of wives who are disagreeable and negligent, without some palpable coldness or short-coming on the part of their husbands. So far as we have had opportunity for observation they are far more devoted and faithful than those who style themselves their lords, and who by the customs of society have other and generally more pleasant and varied duties to perform. We protest then against these lectures so often and so obtrusively addressed to the ladies, and insist upon it, that they must—most of them—have been written by some fusty bachelors who knew no better, or by some inconsiderate husbands who deserve to have been old bachelors to the end of their lives. But is there nothing to be said on the other side? Are husbands so generally the perfect, amiable, injured beings, they are so often represented? Men sometimes declare that their wives' extravagances have picked their pockets, that their never ceasing tongues have robbed them of their peace, and their general disagreeableness has driven them to the tavern and the gaming-table; but this is generally the wicked excuse for a most wicked life, on their own part. The fact is, men often lose their interest in their homes by their own neglect to make their homes interesting and pleasant. It should never be forgotten that the wife has her rights—as sacred after marriage as before—and a good husband's devotion to the wife after marriage will concede to her quite as much attention as his gallantry did while a lover. If it is otherwise he most generally is at fault.

"Take a few examples. Before marriage a young man would feel some delicacy about accepting an invitation to spend an evening in company where his "ladye love" had not been invited. After marriage is he always as particular? During the days of courtship, his gallantry would demand that he should make himself agreeable to her; after marriage it often happens that he thinks more of being agreeable to himself. How often it happens that married men, after having been away from home the livelong day, during which the wife has toiled at her duties, go at evening again to some place of amusement, and leave her to toil on alone, uncheered and unhappy. How often it happens that her kindest offices pass unobserved, and unrewarded even by a smile, and her best efforts are condemned by the fault-finding husband. How often it happens, even when the evening is spent at home, that it is employed in silent reading, or some other way that does not recognise the wife's right to share in the enjoyments even of the fireside.

"Look, ye husbands, a moment, and remember what your wife was when you took her, not from compulsion, but from your own choice; a choice, based, probably, on what you then considered her superiority to all others. She was young—perhaps the idol of a happy home; she was gay and blithe as the lark, and the brothers and sisters

at her father's fireside, cherished her as an object of endearment. Yet she left all, to join her destiny with yours; to make your home happy, and to do all that woman's love could prompt, and woman's ingenuity devise, to meet your wishes, and to lighten the burdens which might press upon you in your pilgrimage. She, of course, had her expectations too. She could not entertain feelings which promised so much, without forming some idea of reciprocation on your part, and she did expect you would, after marriage, perform those kind offices, of which you were so lavish in the days of betrothment. She became your wife; left her own home for yours; burst asunder, as it were, the bands of love which had bound her to her father's fireside, and sought no other boon than your affection; left, it may be, the ease and delicacy of a home of indulgence, and now, what must be her feelings if she gradually awakes to the consciousness that you love her less than before; that your evenings are spent abroad; that you only come home at all to satisfy the demands of your hunger, and to find a resting place for your head when weary, or a nurse for your sick-chamber when diseased? Why did she leave the bright hearth of her youthful days? Why did you ask her to give up the enjoyments of a happy home? Was it simply to darn your stockings, mend your clothes, take care of your children, and watch over your sick bed? Was it simply to conduce to your own comfort? Or was there some understanding that she was to be made happy in her connexion with the man she dared to love?

Nor is it sufficient answer that you reply that you give her a home; that you feed and clothe her. You do this for your help; you would do it for an indifferent housekeeper. But forget not that a wife is more than a housekeeper. She is *your wife*, and unless you attend to her wants, and in some way answer the reasonable expectations you raised by your attentions before marriage, you need not wonder if she be dejected, and her heart sink into insensibility; but if this be so, think well who is the cause of it. We repeat it, very few women make indifferent wives, whose feelings have not met with some outward shock, by the indifference or thoughtlessness of their husbands. It is our candid opinion, that in a large majority of the instances of domestic misery, the man *is the aggressor*.

THE BENEFACTRESS.—MRS. L. H. SIGOURNEY.

Who asks if I remember thee? or speak thy treasured name?
Doth the frail rush forget the stream, from whence its greenness came?
Doth the wild, lonely flower that sprang in some rude, rocky dell,
Forget the first awakening smile, that on its bosom fell?

Did Israel's exiled sons, when far from Zion's hill away,
Forget the high and holy home, where first they learned to pray?
Forget, around their temple's wreck, to roam in mute despair,
And o'er its hallowed ashes pour a grief than none might share?

Remember thee! Remember thee! though many a year hath fled
Since o'er thy pillow cold and low the uprooted turf was spread,
Yet still doth twilight's musing hour thy graceful form restore,
And morning breathe thy music tone, like Memnon's harp of yore.

The simple cap that decked thy brow is still to Memory dear
Her faithful echoes keep thy song that lulled my infant ear;
The book, from which my lisping tongue was by thy kindness taught,
Returns with all its lettered lines illumed with hues of thought.

The flowers, the dear familiar flowers, that in thy garden grew,
From whence thy mantel-vase was filled, methinks they breathe anew;
Again the whispering lily bends, and ope yon lips of rose,
As if some message of thy love they lingered to disclose.

'Tis true that more than fourscore years had bowed thy beauty low,
And mingled with thy cup of life full many a cup of wo,
But yet, thou hadst a higher charm than youthful bloom hath found,
And balm, within thy chastened heart, to heal another's wound.

Remember thee! Remember thee! though with the blest on high,
Thou hast a mansion of delight, unseen by mortal eye
Comes not thy wing to visit me, in the deep watch of night,
When visions of unuttered things do make my sleep so bright?

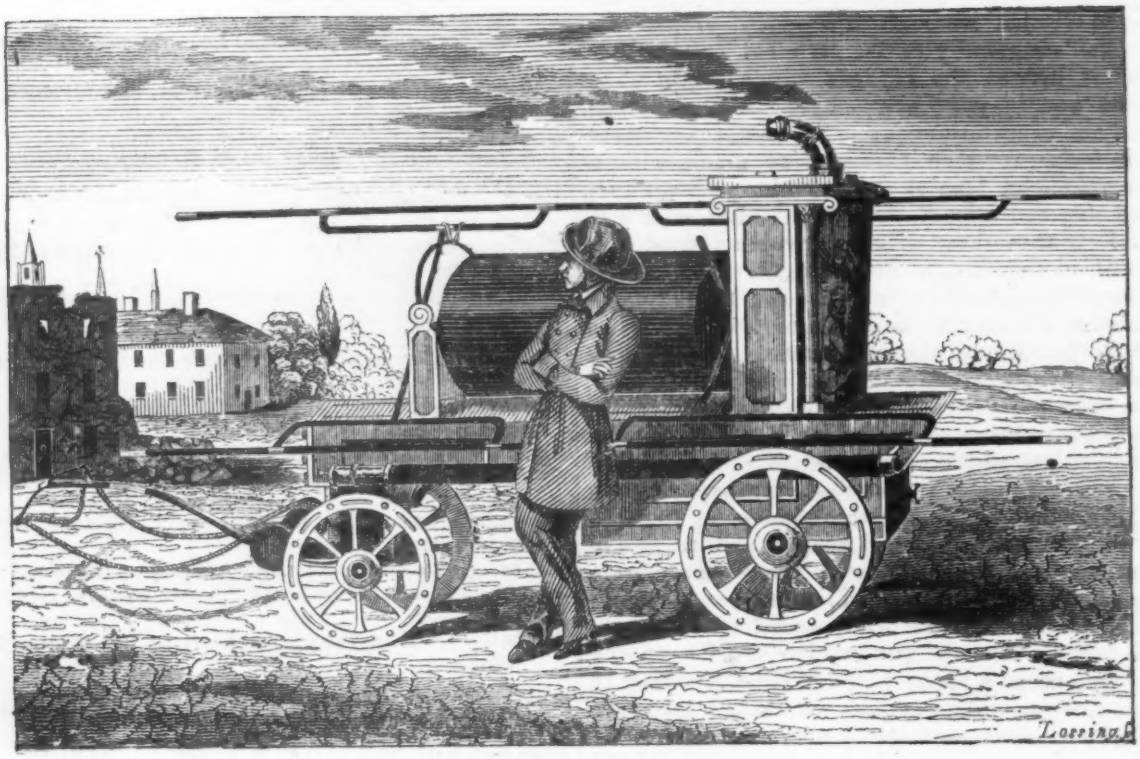
I feel thy love within my breast, it nerves, me strong and high,
As cheers the wanderer on the deep the pole-star in the sky,
And when my weary spirit quails, or friendship's smile is cold,
I feel thine arm around me thrown, as oft it was of old.

Remember thee! Remember thee! while flows this purple tide.
I'll keep thy precepts in my heart, thy pattern for my guide:
And when life's little journey ends, and light forsakes the eye,
Come near me, at my bed of pain, and teach me how to die.

SONNET TO THE FIRST MOSCHETO.

Aha! you herald of a race accurst
I hear your trumpet! Now I feel your sting,
You ravenous, blood-thirsty little thing!
You outlawed little devil you! How durst
You drink my blood to quench your raging thirst?
Come, "blood for blood," you wretch! 'Tis hard to kill,
When 'tis my own blood I am doomed to spill!
Drink deep, and quaff the red wine till you burst;
'Tis your last belly-full, as 'tis your first;
You've got to die—you're standing on the brink
Of death: and all because you took to drink.
Come, say your prayers: be ready for the worst!
Once—twice—one instant only to repent you!
Die wretch! Go down somewhere, and say I sent you.

AMERICAN FIREMEN.—No. I.



New York Fireman and Engine.

NEW YORK FIRE DEPARTMENT.

We intend to give in successive numbers, statistics of the Fire Department in each of our larger cities respectively, with illustrations of the costumes of the firemen, and forms of their engines, as far as we are able to obtain information. Among the many inventions of modern philanthropy, the organization of bands of men against the destructive operations of fire, for public good, stands conspicuous; and when such organization is complete in any city or considerable town, millions of dollars' worth of property is annually saved from destruction. Hence, information concerning the organization of different departments, may be considered very useful, inasmuch as efficient measures practised by one, may be made known to another, and mutual improvement be the consequence. There is yet a wide field for improvement, and much remains to be done in the invention of preventives, ere the destructive character of conflagrations in our large cities will be changed. We commence with the Fire Department of the city of New York.

The above engraving represents a New York fireman in full costume, and a correct exterior view of a New York engine, with its hose coiled and covered upon the windlass. The cap of the fireman is made of very strong leather; a rim wider back than front; the top covered with stiff projections crossing each other at right angles in the centre, forming a protection to the head: in front is a stiff piece of leather, in the form of a shield, on which the number of the company and initials of the owner are usually painted. The frock coat and the pantaloons are made of stout pilot-cloth, black or brown, under which is worn a red flannel shirt. Some of the companies have leather legs to their pantaloons, or rather, have boots with legs reaching to the knee and attached to the pantaloons. Their whole costume is at once a protection against wet and cold.

The whole Fire Department is under the direction of a chief engineer, and nine assistant engineers, whose duty it is to be present at all fires, if practicable, and to superintend the general concerns of the Department.

The chief engineer and assistant engineers are nominated by the whole body of firemen to the Common Council for appointment, and hold their offices at the pleasure of the Common Council. The candidates for nomination are ballotted for, and the persons receiving the highest number of votes are entitled to a nomination to the Common Council for appointment. The salary of the chief engineer is five hundred dollars (formerly twelve hundred) per annum.

According to the last published report of the chief engineer, (*Cornelius V. Anderson,*) there are in the city, thirty-five engines in good order, six in indifferent order and five rebuilding; twenty-four hose carriages, with 24,600 feet of

Costume of Chief Engineer.

hose—two carriages building, and one rebuilding; seven hook-and-ladder trucks, forty-one ladders and forty-six hooks; 37,000 feet of hose in good order, and 4,700 feet in ordinary, making in the whole, (including five hundred feet at the new almshouse,) 42,200 feet; one hundred and fifty buckets. There are in the department one hundred and twenty companies, of which twenty-seven are not doing duty, twenty of which are hose companies. There are in the department 1758 men, of which two hundred and sixty-nine are not doing duty.

In the upper part of the city, a large reservoir is located, from which water flows in abundance through the principal streets in pipes which, through hydrants supyly the hose and engines. This is a great aid, and it is believed that when the Croton water works are finished, such will be the abundance of water, that fires will become as infrequent in New York as elsewhere, and that she will lose her name of "City of Fires."

SCIENTIFIC NOTICES.

STRENGTH OF IRON.

The temperature of maximum strength for cast iron has been estimated at about three hundred and ninety-eight degrees; but the Committee on the Explosion of Steamboilers, appointed by the Franklin Institute, consider that the maximum for wrought iron is very rapid; at a red heat, or about eight hundred degrees, it is only one-sixth of the maximum; so that in a range of less than five hundred degrees, it loses five-sixths of its strength. As the relative strength of wrought iron at three hundred degrees to eight hundred degrees, is about six to one; therefore, if the temperature of the iron above three hundred degrees *increase*, in an arithmetical progression, whose rate is one hundred degrees, the relative strength will *decrease* in an arithmetical progression, whose ratio is one.

NEW MICROSCOPIC APPARATUS.

M. Dujardin has invented an apparatus in which, by means of achromatic lenses, fixed in a tube at the foot of the instrument, the illuminating light appears to issue from the objects themselves, and thus avoids the effects of diffraction, which often gives to small lines a false diameter. A greater clearness is thus given to objects and a permission to an indefinite augmentation of the light.

ELECTRICITY OF WOOD.

M. Ratt, a cabinet-maker, when planing wood,

remarked that several chips manifested electric phenomena. By means of an electrometer he ascertained, that in certain species, especially those of America, the electricity was positive, while in others it was negative, and this particularly characterized the French woods.

SOUNDS CAUSED BY ELECTRICITY

M. Sellier has found it sufficient to place an electric diamond upon a pane of glass in order to produce sounds. When a well polished sewing needle, suspended from a hair, is placed in a glass bowl filled with an acid sulphate of copper, the bowl crackles, even after the needle has been withdrawn and the liquid poured out. Small currents of common electricity become perceptible to the ear, by the means of wheaten straw, struck upon a drum of vegetable paper.

AN ELECTRICAL LADY.

A respectable physician, in a late number of Silliman's Journal, relates the following curious account of an *Electrical Lady*. He states, that on the evening of January twenty-eighth, 1839, during a somewhat extraordinary display of the northern lights, the person in question became so highly charged with electricity, as to give out vivid electrical sparks from the end of each finger to the face of each of the company present. This did not cease with the heavenly phenomenon, but continued for several months, during which time she was constantly charged, and giving off electrical sparks to every conductor she approached. This was extremely vexatious, as she could not touch the stove, nor any metallic utensils, without first giving off an electrical spark, with the consequent twinge. The state most favorable to this phenomenon was an atmosphere of about eighty degrees Fahrenheit, moderate exercise, and social enjoyment. It disappeared in any atmosphere approaching zero, and under the debilitating effects of fear. When seated by the stove, reading, with her feet upon the fender, she gave sparks at the rate of three or four a minute; and under the most favorable circumstances, a spark that could be seen, heard, or felt, passed every second! She could charge others in the same way, when insulated, who could then give sparks to others. To make it satisfactory that her dress did not produce it, it was changed to cotton and woollen, without altering the phenomenon. The lady is about thirty, of sedentary pursuits, and delicate state of health, having for two years previously suffered from acute rheumatism and neuralgic affections, with peculiar symptons.

STRUCTURE OF FOSSIL TEETH.

Professor Owen has read to the British Association, a paper on this interesting inquiry, in which the curious modifications which this structure undergoes in the Megatherium, the Ichthyosaurus, and fossil fishes, were illustrated. Mr. Owen has examined sixty classes, mammalia, reptiles, and fishes; and he has found, on comparing their structure with the teeth of man, that they all differ. It would be impossible to give the details, but the general result of the investigations is a most important one to geologists, namely, that the different genera may be distinguished by the internal structure of their teeth alone; and, therefore, when other characters, fail, or a complete tooth is unattainable, generic, nay, perhaps, even specific, identity, may be established by merely obtaining a thin slice of one of these fossil teeth.

WHITE LIGHT FROM BURNING CORALLINES.

An intelligent correspondent of the *Magazine of Natural History* states that a very beautiful white light is produced by holding pieces of *Corallina officinalis* close to the flame of a candle. "It appears," adds he, "to be a beautiful practical illustration of the hydro-oxygen light, the hydrogen being evolved by the candle, and the oxygen contained in the coral and the surrounding atmosphere which being decomposed, gives out a sufficient quantity of each to unite in the proportions necessary to form this fine light."

THE INDIAN JUGGLERS' SECRET.

Lieutenant Hutton states, that the snakes which the Indian jugglers handle with impunity, are drugged with opium, which renders them quiet and harmless. The effects of the drug will not wear off for a fortnight or three weeks: a drugged snake which Lieutenant Hutton purchased, at the lapse of three weeks, flew at him unexpectedly, and nearly strangled him.

DISTRICT OF THUNDER AND LIGHTNING.

Thunder can scarcely ever be heard more than twenty or thirty miles from the flash which produces it. Lightning, on the other hand, may be seen, (or, at least, its reflection in the clouds, forming what is called "sheet lightning,") at a distance of one hundred and fifty or two hundred miles.

PERFUME OF FLOWERS.

According to the experiments of M. M. Schubler and Kohler of Tubingen, white flowers are the most numerous in creation, and the most odoriferous; and to these succeed the red flowers.

VOLTAIC CONDITION OF IRON.

Professor Schœnbein states, that according to his experiments, peroxide of silver proves to be the most powerful means for exciting in iron its peculiar voltaic condition. It surpasses in this respect, even the peroxide of lead. An iron wire, for instance, one end of which is covered with only a small particle of the firstmentioned substance, will not be attacked either by nitric acid of any degree of dilution, or a solution of blue vitriol. The voltaic association of one substance with the other is easily effected by connecting one end of an iron wire with the positive electrode of a pile, and by plunging for a few minutes the other end of the wire into a solution of nitrate of silver.

COMPOSITION OF THE BLOOD.

M. Lecanu states that venous blood of man

may be considered on an average as composed of

Serum,	869.1547
Globules,	130.8453
	1009.

Or of

Water	790.3707
Oxygen, Azote, Carbonic Acid, Extracted Matters, Phosphorized Fat, Cholactrine, Serolin, Free Oleic Acid, Free Margaric Acid, Hydrochlorate of Soda, Hydrochlorate of Potash, Hydrochlorate of Ammonia, Carbonate of Soda, Carbonate of Lime, Carbonate of Magnesia, Phosphate of Soda, Phosphate of Lime, Phosphate of Magnesia, Sulphate of Potash, Lactate of Soda, Salt of fixed fat Acid, Salts of volatile fat Acid, Yellow coloring matter	10,9900
Albumen of the Serum	67.8040
Globules	130.8453
	1000.

The globules are stated to be composed of

Fibrin	2.9480
Hematosin	2.200
Albumen	125.6273
	130.8453

A POWERFUL NATURAL MAGNET.

An interesting description was not long since in an English scientific periodical, of a natural magnet of wonderful power, and some circumstances connected with it, must make it particularly interesting to the American reader.

It seems that as early as 1772, when Benjamin Franklin was in Glasgow, he had much conversation with Professor Anderson on the subject of electricity and magnetism—and promised to send the Professor from America, a specimen of some fine loadstones which were found in abundance in some places in Virginia. Franklin was as good as his word—and in 1776, Professor Anderson received the promised mineral, and put the most promising portion of the mass into the hands of Mr. Crichton, an ingenious mechanic, who was skilful in the manufacture of scientific apparatus. It was armed in the most approved manner—but its power was in no way remarkable. Several smaller portions of the mass were similarly fitted up—but they, like the principal, proving almost valueless, the Professor declined making any further trials, and finally laid aside all thoughts of the matter.

Several years passed away—but in 1781 or 1782, Mr. Crichton casually rummaging a lumber box which stood beneath his workbench, discovered some small fragments of the almost forgotten loadstone, surrounded by iron filings and other ferruginous dust; and observing that one of these fragments carried a larger load of filings than the others, he was induced to bestow, at his leisure, what he, at the time, considered a little hopeless labor, in grinding the fragment into a proper shape with regard to its poles. After which diminution, iron arms were attached in a temporary manner by means of a thread; when to his great surprise, its first load, though hastily applied, and supposed to be in excess, required considerable force to effect its removal.

Mr. Crichton now thought that the fragment was worthy of additional labor; he ground it with great care into its proper form, with regard to polarity—and when finished, the little stone with its arming, was enclosed in a thin case of gold, having a ring at the top for suspending it. A load was attached, consisting of a pyramidal shaped piece of soft iron, of a weight judged to be rather under its maximum power, that is, seven hundred and eighty-three grains—while the stone itself weighs, precisely two and a half grains—carrying therefore three hundred and thirteen times its own weight!

It is now fifty-seven years since that little spark of the mine was first enclosed. The case was opened about thirty years ago, to examine the arms, but the old ones appearing faultless, the whole was immediately put together in its original state. The same mass of iron has been used as its load from the beginning, and is placed merely in contact with the arms. The power of adhesion appears to be as great as it has ever been—and it is supposed that by careful application the load could be increased to considerably more than eight hundred grains—but lest the trial might prove injurious it has never been made.

Boston Journal.

CHARMS OF CONVERSATION.

It is not from the acquisition of ideas, but from the application of them, that conversation derives its greatest charm. Thus, an exceedingly well informed talker may be indescribably tedious; while one who is comparatively ignorant, as regards mere facts, having brought to bear, upon every subject contemplated, a lively imagination combined with a sound judgement, and a memory stored, not only with dates and historical events, but with strong and clear impressions of familiar things, may rivet the attention of his hearers, and startle them, for the time, into a distinctness of impressions which imparts a degree of delightful complacency to his hearers, and to the entertainer himself.

There is no conversation more shocking, than that of a snarling couple who are continually reproaching each other.

GREAT SEAL OF THE UNITED STATES.

THE above engraving represents the two sides of the great seal of the United States, adopted by Congress. The following is its heraldic definition.

"ARMS.—Paleways of thirteen pieces, argent and gules, a chief azure; the escutcheon on the breast of the American bald eagle displayed proper, holding in his dexter talon an olive branch, and in his sinister, a bundle of thirteen arrows, all proper; and in his beak a scroll inscribed with this motto, 'E pluribus unum.'

"FOR THE CREST.—Over the head of the eagle, which appears above the escutcheon, a glory, or breaking through a cloud proper, and surrounding thirteen stars forming a constellation, argent, or an azure field.

"REVERSE,—A pyramid unfinished.

"In the zenith an eye in the triangle surrounded with a glory, proper. Over the eye these words, 'Annuit Cœptis.'

"On the base of the pyramid, the numerical letters, MDCCLXXVI, and underneath the following motto. 'Novus ordo seclorum.'

"REMARKS AND EXPLANATIONS OF THE DEVICE.—The escutcheon is composed of the chief and pale, the two most honorable ordinaries. The thirteen pieces paly represent the several states in the union, all joined in solid compact, entire, supporting a chief which unites the whole, and represents Congress. The motto alludes to this union.

"The pales in the arms are kept closely united by the chief, and the chief depends on that union and the strength resulting from it, for its support, to denote the confederacy of the United States, and the preservation of the Union through Congress.

"The colors of the pales are those used in the flag of the United States of America. White signifies purity and innocence, red hardiness and valor, and blue, the color of the chief, signifies vigilance, perseverance, and justice. The olive branch and arrows denote the power of peace and war, which is exclusively vested in Congress.

"The crest or constellation denotes a new state taking its place or rank among other sovereign powers.

"The escutcheon borne on the breast of an American eagle, without any other supporters, to denote that the United States of America ought to rely on their own virtue.

"The pyramid on the reverse signifies strength and duration.

"The eye over it, and the motto ('annuit cœptis,' 'he prospers our endeavors,') alludes to the many signal interpositions of Providence in favor of the American cause.

"The date underneath is that of the Declaration of Independence, and the words under it signify the beginning of the New American Æra, which commences from that date.'

FARMERS' DEPARTMENT.

THE PARAMOUNT NATIONAL INTEREST.

IN a country like ours where millions of acres, rich with the accumulated vegetable compost of centuries, invite labor and industry to a pursuit where an abundant reward is sure, agriculture is truly, (and should be so considered) the chief interest of the nation. Commerce and manufactures are also weighty interests, and are principal constituents in the formation of national character and the accumulation of national and individual wealth; yet they are artificial, and depend solely upon agriculture for a sure basis on which to rest. When imprudence or unforeseen calamities disturb the laws of trade, embarrass commercial operations, and depress the manufacturing and mechanical interests of the country, then all eyes are turned to the grainfields of the north and west, and the cotton plantations of the south, as the source from whence sure remedies for existing evils must come. When due proportions of sun and shower draw forth from the exuberant bosom of earth its varied treasures, and there are promises of abundance in the coming harvest, then, even in the darkest hour of commercial distress the sunbeams of hope enlighten the future

and all are ready to exclaim, in view of anticipated abundance:—

"Behold how brightly breaks the morning."

It is from the soil that the sure wealth of a nation established in a land with a climate and other natural advantages like ours, must be drawn; and it should be the ardent prayer of every patriot that the great interests of agriculture should ever be held paramount to all others. That foolish pride which denies the nobility of manual labor and urges thousands of yeomen's sons to engage in mercantile pursuits, should be discouraged. Many, very many, think it far more honorable to stand behind the counter in large cities and buy and sell the products of manufacturers, than to hold the plough or swing the scythe; and are ready to exchange the honest independence of the life of a farmer, for the precarious and vexatious pursuit of the merchant. That the latter is an honorable pursuit, we of course admit, but that it is *more* honorable than the former, we deny. Admitting then, that agricultural pursuits are as honorable as any other, what inducement can there be for the sons of farmers to leave the pure air and moral influences of the country, and bury themselves in the cares, and the moral and physical impurities of cities? The young farmer finds his labor, when connected with temperance, to be the best preventive, in the materia medica, of disease of both mind and body; and as for *independence*, he can truly say:—

"I am monarch of all I survey,
My right their is none to dispute;"

and boast like Shakespeare's husbandman:—"I am a true laborer. I earn that I eat, get what I wear owe no man hate, envy no man's happiness; glad of other men's good, content with my farm, and the greatest of my pride is to see my ewes graze and my lambs suck." Again:—

"I eat my own lamb,
My chickens and ham,
I shear my own fleece and I wear it."

With these advantages, how can a young man "long debate which of the two to choose," the pure breath of heaven or the smoky atmosphere—the prospect of brick and mortar and the eternal rattle of carts and omnibusses; or the green woods, the golden harvest fields, and the sweet melody of birds.

History will bear us out in the assertion that in all ages, whenever the chief pursuit of a nation was agriculture, permanent prosperity marked its course—the morals of the people were of a high character, when judged of by the standard of the age, and the nation and individuals enjoyed more genuine happiness than fell to the lot of a commercial people. The happiest days of Rome were during that period of the commonwealth when, to be a good husbandman was considered a high honor, and when, like Cincinnatus, her rulers were invested with the purple, at the plough. When by foreign conquests wealth was poured into her lap and agriculture was neglected for the barbarous pursuit of war, her people degenerated and the seeds of decay were planted. So it has been with other nations, when the agricultural interests were neglected; and Adam Smith in his "Wealth of Nations" clearly traces out the prime cause of the degeneracy of Spain, in her conquest of Peru and the discovery of its immense mineral wealth, in the sixteenth century. By this event, large numbers of Spaniards were induced to leave their country to amass fortunes in this *El Dorado* of the western world, and the great wealth which the mines of Potosi and others poured into old Spain, introduced luxurious habits, to the great detriment of agriculture and the consequent degeneracy of the people.

It is to be hoped that in this country, so well adapted to the pursuits of agriculture, it will ever remain the paramount national interest; and that while we foster commerce and manufactures, and all other avocations of general and individual utility, we may ever look to agriculture as the great foundation upon which all rest, and the sure and inexhaustible source from whence our wealth and power are derived.

BUTTER.

Butter, being an indispensable article for the table, forms the most important product of the dairy, and may, with proper management, be made the source of considerable profit, with little labor, to every farmer. Yet its manufacture is too much neglected, and either from a want of care or knowledge on the part of the dairy-women, our markets are well stored with bad butter, fit only for the use of the soap-maker. We have selected from good authorities, the following rules and remarks on butter making.

1. That every thing should be cleanly in the whole process.
2. That the milk should be kept at a proper temperature, say from forty-five to fifty-five degrees, while the cream is separating.
3. The cream should be taken off and churned, before its quality is impaired.
4. That its temperature should be from fifty-

five to sixty-five degrees, when put into the churn, and the churning should be moderate and uniform.

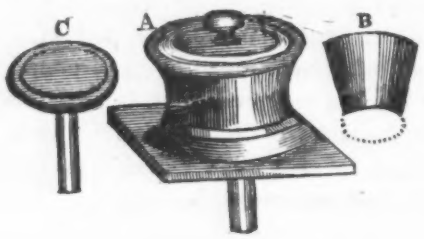
5. That salt, of the best quality, in sufficient quantity to suit the palate, should be blended with it at the first working, and the buttermilk, completely got out by the butter ladle.

6. That the working of the butter should be repeated at the end of twenty-four hours, when the salt has become completely dissolved, and all the liquid extracted—and

7. That it should be packed, without more salt, to make it weigh, in stone jars, in wooden firkins or tubs, such as will not impart to it any taint or bad flavor—and in such a manner as will totally exclude the atmosphere.

Butter made in this way, will be of fine flavor; and if put down and kept in this way, the flavor will be preserved for an almost indefinite period, if kept in a temperature below seventy degrees. Water mixed either with the milk, the cream, or the butter, and especially soft water, adds nothing to, but materially abstracts from richness of flavor. Milk skimmed at three several times, will give three qualities of butter—that taken off first being the richest and most valuable.

The common remark of our good butter women, is, that "my butter is good enough"—and many think so, whose butter is very inferior. But as the principle of the dairy women is gain, and as butter will sell according to its intrinsic value, every one should seek to improve, if not to please themselves, to please their customers, and not for the sake of "filthy lucre."



Butter Mould.

The Philadelphia "Farmers' Cabinet" contains the following description of a butter mould, and remarks, "It is not generally known or manufactured, but any mechanic can easily make one."

The butter stamp consists of a small round box fastened to a square piece of deal, through the bottom of which is a hole for the introduction of the handle of a second box, which fits within the first. The second box is similar to the first, except it is detached from the bottom, and consists of three pieces of wood hollowed out and made to shut close to each other. When the handle with the bottom attached is drawn down, the pieces fall into a groove running around the bottom of the second box. The butter is weighed and placed in the box, the handle being down. The stamp is then placed on the top of the butter, and forced down hard, giving it the proper shape and print—after which the butter is turned out complete by forcing the bottom up, by means of the handle seen in the figure, which causes the second box to fall apart, as it were, and thus releases the butter. This is a very expeditious way of printing and moulding butter.

Fig. A represents the article with the butter in it—the stamp on and all ready to force out. B the part or one of the sides of the three sided inner box. C the bottom with handle.

The best and richest butter of the year is that made after the vegetation of the year is developed in May and June, as the food is sweeter then than at any other time. But notwithstanding all the care that can be used, in ordinary cases, such butter cannot be preserved through the summer, in a state fit for winter's use. There can be no doubt, that packed in jars perfectly close, entirely freed from buttermilk or extraneous matters, salted in the just proportion with pure salt, and kept in a temperature below fifty degrees, the butter of June would be in perfection in January. This combination of favorable circumstances, however, can be rarely obtained, and farmers, as well as others who do not keep milch cows for the purpose of supplying them with milk and butter through the winter, must rely on butter packed in autumn for their winter supply. Too many farmers, we think, are in the habit of delaying the providing their stock of butter too late in the season. The reasons for this are, it does not require as much care in making and working the butter to make it keep well, as it would if made earlier in the season; and if made late, and after a low temperature has arrived, packing may be dispensed with, or at least, may be performed very imperfectly. But such late butter has several disadvantages. It is usually made from vegetation that has been more or less frost bitten, and, therefore, does produce milk of the richness and purity which is essential to the making of the best butter. Further, as the grasses decay, the range of feeding by the animals is increased, and vegetation, which at other times would be refused by the cows, is now eaten with avidity by them. The gleanings of the fields, the refuse of the garden, the inferior cabbages, tops of the beet and turnip, &c., are put in requisition usually late in the season, and though unquestionably useful to the animal, are far from improving the qualities of the butter. If the farmer has a good supply of pumpions or carrots which he can feed to his cows, he can make first rate butter at any time; but unless he is so provided, his stock of winter butter should be put down before his cows are driven to subsist on food that will be sure to deteriorate the article. The tops of almost any of the cultivated roots produce a greater effect on the butter than the roots themselves. Thus, when we have fed out the tops of the ruta baga to our cows, the effect on the butter has been very distinct and disagreeable, while in that from the cows fed on the roots and hay, very little alteration of taste was perceptible. Such butter should not be used for keeping, as it never grows better, but will continue to deteriorate, until hardly fit for the table, or even for the cook.

BOOK-FARMING.

Do *the words* produce a sneer? Be that as it may—the *thing*, or what is often stigmatized as

that thing, is not contemptible. For, what is it? Not an attempt to comply with the advice and copy the example of every one who furnishes an article for an agricultural journal; not the adoption of every method of husbandry that is recommended in print; not a departure from all the usages of our fathers and neighbors; not a preference of the theories contained in books, to the results of experience. No! I pity the stupidity of the man who thinks that if we use books, we must close our eyes against the light that is beaming upon us from other sources; or that we must become mere theorisers, and the victims of ruinous experiments. What! does a man lose his own common sense, his prudence and his judgement, whenever he takes up an agricultural paper, or opens a book upon husbandry? Cannot one make himself acquainted with the doings of others without losing his power to judge whether it would be well for him, in his circumstances, to copy their examples? Our brains are not so weak as this. The knowledge acquired from books does not make us all mad. But if it did, there would be more zest, and true enjoyment in the learned madman's course, than in that of him who has learned out, and who thinks that books cannot make him wiser. I ask what book-farming is? Common book-farming is, learning by means of books, new facts, opinions, results of experiments, modes of operation, and the using such parts of the information as can be turned to profitable account in our individual situations. If this be folly, we are content to be called fools. An agricultural paper will be worth to you every month, if not every week, more than its annual cost. Putnam's Address.

THE HISTORY OF HUMAN LIFE.

How truly does the journey of a single day, its changes and its hours, exhibit the history of human life. We rise up in the glorious freshness of a spring morning. The dews of night, those sweet tears of nature, are hanging from each bough and leaf, and reflecting the bright and myriad hues of the morning. Our hearts are beating with hope, our frames buoyant with health. We see no cloud, we hear no storm, and with our chosen and beloved companion clustering around us, we commence our journey. Step by step the scene becomes more lovely, hour by hour our hopes become brighter. A few of our companions have dropped away, suddenly we have entered upon a new country. The dews of the morning are exhaled by the fervor of the noonday sun; the friends that stand with us are disappearing. Some remain, but their looks are cold and estranged; others have become weary, and have laid down to their rest; but new hopes beckon us on. The scene is more glorious and brilliant, but the beauty and freshness of morning have faded, and for ever. But still our steps fail not, our spirits droop not. Onward and onward we go; the horizon of happiness and fame recedes as we advance to it; the shadows begin to lengthen, and the chilly airs of evening are usurping the fervor of noonday. Still we press onward; the goal is not yet won; the haven not yet reached. The bright orb of hope that had cheered us on, is sinking in the west, our limbs begin to grow faint, our hearts to grow sad; we turn to gaze upon the scenes that we have passed, but the shadows of twilight have interposed their veil between us; we look around for the old and familiar faces, the companions of our travel, but we gaze in vain to find them; we have outstripped them all in our race after pleasure; and the phantom yet uncaught, in a land of strangers, in a sterile and inhospitable country, the nighttime of death, and weary and heavy laden, we lie down to rest in the bed of the grave. Happy, thrice happy is he, who hath laid up treasures for himself for the distant and unknown to-morrow.

Zoar, in Ohio, was settled by a company of Germans who put their property in common stock, with a patriarch at their head. They came over and purchased the township about 1820. One of the conditions of the compact was, that no one of the associates should marry until the affairs had arrived at such a state of maturity that the patriarch should think it expedient to remove the restraint. In the space of fifteen years, they had built a town, cultivated gardens and fields, erected a church, mills, &c. Of schoolhouses they had no need, for there was not a child in the town. A gentleman who spent a sabbath with them in 1834, says the patriarch, then about seventy years of age, read a portion of the Bible, and then delivered an address, in German of course. The music was very fine, accompanied with all sorts of instruments. The company consisted of about two hundred and fifty men, and a still larger number of women. There was no reason to doubt that the agreement of celibacy had been faithfully kept; about a year afterward the patriarch removed the restraint, and was one of the first to use the liberty he had granted.

Do not wrap knives and forks in woollens. Wrap them in good strong paper. Steel is injured by lying in woollens.

The oftener carpets are shaken the longer they will wear; the dirt that collects under them grinds out the threads.

Never allow ashes to be taken up in wood, or put into wood. Have important papers all together, where you can lay your hand on them at once, in case of fire.

Salve for inflamed wounds.—Lard which has been melted and cooled in fresh water four or five times in succession, and then simmered with sliced onions, and strained, makes a most excellent salve for wounds inflamed by taking cold.

LITERARY NOTICES.

HARPERS' FAMILY LIBRARY. The Messrs. Harper have recently made several valuable additions to this popular series, among which are the following:—

Siderial Heavens, by Thomas Dick, L.L.D. 1 vol. This volume, and number lxxxiii, of the Family Library, entitled *Celestial Scenery*, from the same pen, form the most perspicuous, entertaining and instructive compendium of the science of Astronomy, and subjects connected with it, we have ever read. They are written in a popular style with a view to public instruction in this branch of philosophy, and every important fact in relation to the siderial universe around is made an auxillary in the illustration of the character of the Deity. This is a peculiar characteristic of this popular author, and although we commend his philosophical writings to the careful study of all who feel an interest in such subjects, yet we must confess that he sometimes supports his high-toned morality and peculiarity of religious views at the expense of philosophical truths. These defects are so rare, however, and so hidden by excellencies, that they can scarcely be deemed objectionable even by the most hypercritical.

Pursuit of knowledge under difficulties. 2 vols. These volumes are composed of biographical sketches of eminent men in all ages, who, under great difficulties, have pursued and obtained knowledge, and enjoyed its pleasures and rewards. They are replete with strong encouragement to those who are engaged in literary and scientific pursuits, opposed by poverty and other obstacles; and present an array of bright examples to prove, that by perseverance every barrier can be removed, and mountains be made to dwindle into molehills.

The truth is, that our attainment of objects does not so much depend upon circumstances, as upon our inclinations, perseverance and industry; and interposing obstacles are often blessings in disguise, for, like the man who toils hard in earning a competence, he more fully appreciates it, and is more frugal in the enjoyment of his gains. We recommend the careful perusal of these volumes to persons who are fainting by the wayside, in their ascent of the hill of science and learning.

Natural History of Birds. 1 vol. This is a valuable book, not only for the student of Ornithology, but for the general reader. It treats of the architecture, habits and economy of all classes of birds in general, and of many kinds in particular, illustrated by numerous engravings. The author has thrown off the shackles of scientific classification, and "roamed," as he expresses it, "through the woods and forests, unfettered by rules," and imparted a great amount of useful information in a pleasing manner. The very best books of the day, on subjects of Natural History, are of this class, written with a view to the general dissemination of information. Those stern rules of classification, and the technicalities with which too many works of this kind abound, are very proper and indispensable for teachers and students, but they are not at all calculated for popular reading the way in which the million must become instructed in the great truths of nature. The easier the way to knowledge is made, the more useful it becomes, for thousands are induced to enter it when they no longer see the difficulties of scientific rules to be overcome.

The King's Highway. By G. P. R. James, Esq. 2 vols. 12 mo. HARPER & BROTHERS. In our judgement the best of the numerous works of fiction, of this popular and prolific writer. It is a capital picture of the political and social condition of England about the period of the accession of William and Mary, portrayed in pleasing colors by the pencil of Imagination. The rapidity with which James produces popular novels, and the impress of historical truth which the most of them bear, remind us of the time when the Waverly novels from the pen of the "Great Unknown" so rapidly succeeded each other. The name of James to a work of fiction is now a sufficient guaranty for its excellence.

An Exposition and Defence of Universalism, in a series of sermons delivered in the first Universalis church, Baltimore, Md. By Rev. I. D. Williamson, 1 vol. 18 mo. 227 pp. Price 50 cents, NEW YORK P. PRICE. 1840.

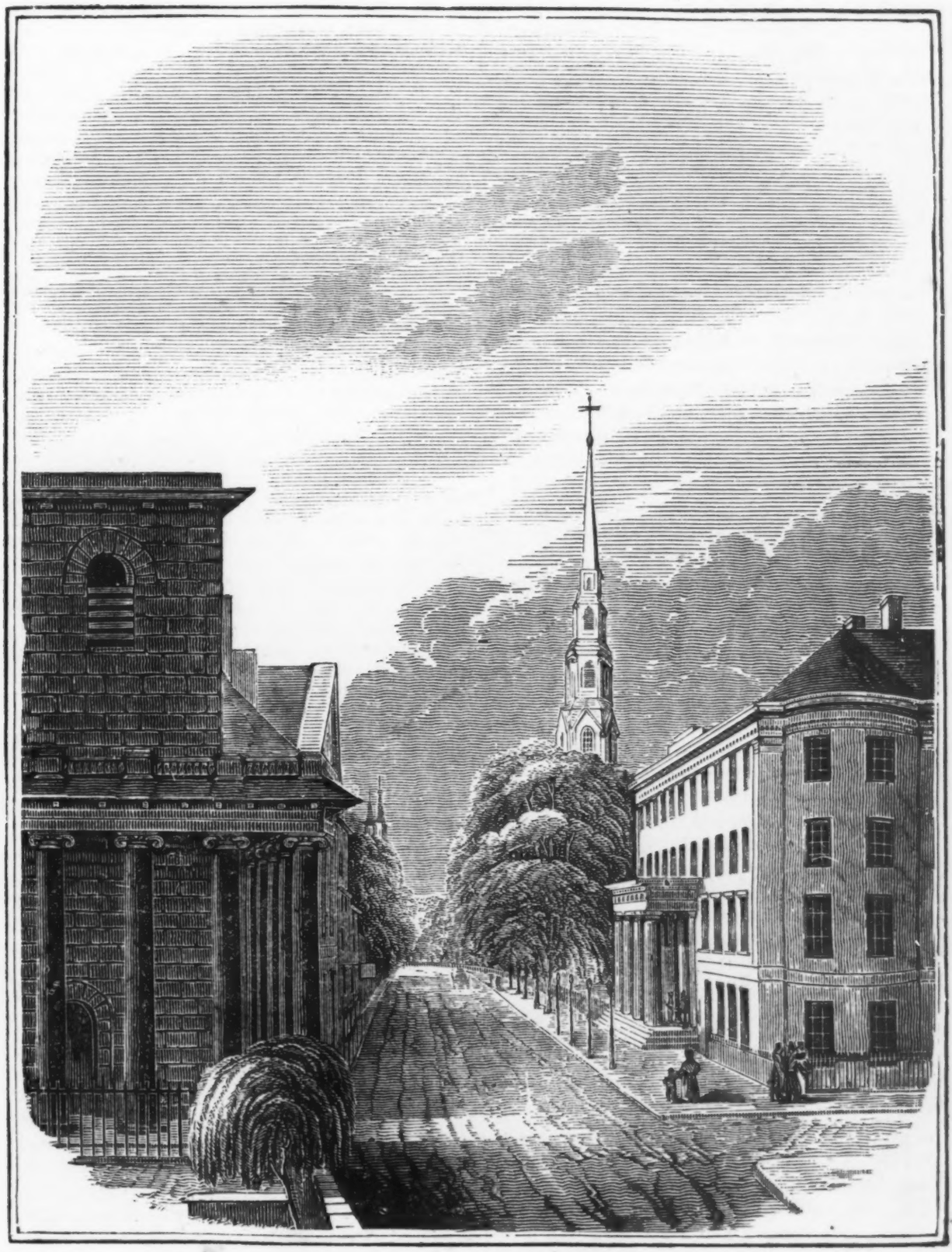
The Layman's Legacy, (Vol. II,) or twenty-five sermon on important subjects. By Henry Fitz, 12 mo, 49 pp. Price one dollar and twenty-five cents. NEW YORK, P. PRICE. 1840.

We have here two volumes from the Universalis book establishment of P. Price, N. Y. which have been recently published in a neat and handsome style. The first named volume, can scarcely fail to command the attention of that denomination, by the beauty of it style, the force of its argument, and the purity of it sentiment. It consists of fifteen discourses on the leading subjects and peculiarities of their faith.

The second volume of the Layman's Legacy is the continuation of the work, the first volume of which we noticed about twelve months ago. The style of this author is peculiar and in his manner of treating his subjects he is *sui generis*. He belongs to that class of sermon-makers who knock you down at once with their arguments and rap you over the knuckles till you cry enough.

Georgia Scenes. 1 vol. HARPER & BROTHERS. Some of our readers will recollect a highly amusing story which appeared in a former volume of our Magazine under the above title, in which a character called Ned Brace, figured conspicuously. This work is from the same pen, and is made up of a series of stories of a similar character, embellished with engravings after the manner of Cruikshank. Reader, buy it, "laugh and grow fat."

We have before us two more works from the same press but have not had time to peruse them.



VIEW IN TREMONT-STREET, BOSTON.

TREMONT-STREET BOSTON.

The name of this street is traced to that given the peninsula, in 1630, by the first settlers at Charlestown, on the north side of the river. They called it Trimontain, on account of three hills to be seen on it. The street ran by the eastern base of one of these hills. But the enterprising citizens have removed the mountain, near which the avenue wound its way. The street remains, but has been made of much greater width and reduced nearly to a level. The city has still the misfortune to have many narrow avenues. Great improvements have been made in this respect however, within a few years. But the work is not yet complete. From Court-street, Tremont-street extends southeast and passes the King's Chapel, so called in ante-revolutionary times; the cemetery inclosed with a plain, neat granite wall; the new block of buildings, on that and Beacon-streets; the spacious and elegant Tremont-House; the new Theatre; another and larger cemetery, crowded with sepulchral monuments and stones; Park-street-church; Hamilton-place; where an extensive lawn, or common, ornamented with walks and trees, bursts upon the view on the right, with a distant prospect of the western bay and the country beyond; on the left a large block of stone dwelling-houses, succeeded farther on, by a block of elegant brick buildings, St. Paul's Church, the Masonic Temple, the entrance of Temple-place, and a row of handsome houses for the distance of eighty rods still further, and the Common lying on the west side of the street, with a wide mall studded with lofty elms, for a border between. This street is near the centre of the city. For bustle and business and crowds, State-street, Washington-street and Kilby-street and Broad-street, surpass it. But for neatness, and for effect with stranger-visitors, Tremont-street, with its spacious edifices, and the Common, must be allowed to be far superior.

American Magazine.

[Original.]

POLITICAL ECONOMY.—No. II.

BY M. WILSON, ESQ.

Having in a former article explained the meaning of the term "Political Economy," and taken a brief view of the progress of the science as comprised in that leading portion of its history which embraces the *Commercial System*, we shall now proceed to enquire into the nature of wealth, or value, and the principles by which it is measured, or estimated, and then mark out those divisions under which the general subject of these essays will be treated.

As political economy is the science of *wealth*, and treats of *values*, it is necessary to a correct understanding of the subject that these terms be explained in order that the sense in which the writer uses them may not be misunderstood by the reader. Wealth and value, although often considered synonymous terms, have nevertheless a difference of signification which has too often been overlooked by writers on political economy, and caused a misapprehension of their views, or given rise to cavil and ungenerous criticism.

The universe by which we are surrounded has been filled by the provident hand of the Creator with innumerable articles of utility to man. Many of these are essential to his very existence, and do not depend upon his exertions for their procurement, while numerous others, although not so apparently necessary to his existence, add greatly to the sum of his enjoyments. Among the former may be enumerated the air which we breathe—the light of the sun—and the rain which fertilizes the earth; and among the latter, all those natural objects of such universal dissemination, that they are incapable of being appropriated and which either supply many of the wants of mankind, or contribute to the gratification of the senses. All these, being articles of utility, possess a certain degree of *value*, incapable of, and indeed requiring no estimation. The value of such articles is said to be *intrinsic*. There are numerous other articles, however, which derive their entire or an additional value, wholly from human labor and these values are capable of being estimated, and are the only ones with which political economy has to do. The trees of our western forests are certainly not valueless to the Indian, yet their very abundance renders their value incapable of being estimated by him. They shelter him from the scorching heat of summer, and protect him from the blasts of winter—they furnish him with the materials for his wigwam—with his implements of war and the chase, and their loss would deprive him of his hunting grounds, and the very means of subsistence. But although these values are inestimable, nothing is given for, and no price set upon them. But when the Indian, by his own industry, has converted these materials into bows and arrows, canoes and wigwams, they become possessed of a different kind of value, admitting of a rigorous estimation, and may be exchanged for other articles whose value has been produced in a similar manner. This kind of value differing from the intrinsic not in the nature of its utility, but in the mode of its production is called *exchangeable value*. There are then two kinds of value—natural or intrinsic, found in objects which are in general abundant and inexhaustible, and derived directly from the gift of God—and exchangeable value, the result of human industry. The term *wealth* as used in political economy is properly applied only to articles of exchangeable value, or to that value produced by labor; and must not be understood to apply to all articles possessed of utility. The wealth of an individual is proportioned to his amount of possessions of ex-

changeable value, or his ability to command them. As we shall have no occasion hereafter to speak of intrinsic values, wherever the term value may be used in this and the following numbers, it will be understood to denote exchangeable value merely.

As articles of exchangeable value derive that value wholly from human labor, they will be found in the possession of those who have exerted the labor requisite to produce them. Hence those who wish to obtain possession of such objects, must either exert the labor requisite for their production, or their labor must be exerted in producing other objects of value which they can exchange for them. It therefore becomes important in the next place, to ascertain what principles shall regulate the exchange of such articles—in other words, what shall be taken as the standard or measure of value. To an individual who possesses articles of value and who wishes to exchange them for other commodities, likewise the result of labor, the value of those articles which he wishes to exchange is equivalent, in his estimation, to the amount of labor which their production has cost him, and he will estimate their value by the amount of labor, or by the articles produced by a similar amount of labor, which they will enable him to purchase or command. The truth of this principle will be very readily perceived by taking an example in which the commodities to be exchanged are the results of labor of the simplest kind, uncombined with either great practical experience or superior natural skill. Thus if in the rudest state of society, before civilization had given rise to divisions of labor and the superior skill attendant upon experience, a fisherman had been employed twenty days with his rude stone-hatchet and knife, in constructing a canoe, and a hunter, with similar materials, and equal skill and diligence, had been employed the same length of time in making twenty bows and arrows, and each should wish to become possessed of the property of the other, they would exchange, not article for article, but in the proportion of labor for labor. The fisherman would not part with his canoe for one bow and arrow, for the simple reason that he would thus be exchanging twenty days' labor for that which need have cost him but one, and he had better make his own bow and arrow than exchange upon such unequal terms. But if it would cost him twenty days' labor to make his own bow and arrow, he would then be willing to exchange article for article, and the real *price* which he is willing to give for the articles, is estimated by the amount of labor required for their production. *Labor* then must be considered the real standard or measure of the exchangeable value of all commodities.

It is the more important to keep this fundamental principle in mind, because, although labor be the real measure of the exchangeable value of commodities, it is not that by which their value is commonly estimated, and an ignorance of, or inattention to, the general principle, has given to the investigations of many a wrong direction, and led to the most erroneous ideas of the nature of wealth itself. Several causes concur to render labor an inconvenient and indeed an almost impracticable instrument by which to measure or estimate the values of commodities. For although two articles may have required the labor of two individuals the same length of time, yet the time itself is not sufficient, in all cases, to determine the proportion between these two quantities of labor, for the one may have required more hardship, and a greater degree of ingenuity than the other, and these circumstances must likewise be taken into account. And although it is difficult to form a very accurate estimate of either, yet in all exchanges where these enter into the labor in different proportions, some allowance is made for both; more indeed by a kind of rough estimate, than by any attempt at accurate measurement.

And besides, commodities are seldom exchanged for labor, but more frequently for other commodities; and their value is thus more naturally compared with those articles for which they are exchanged, than with the labor which they represent. And further, when exchanges had progressed beyond the rude stage of barter, and some specific object had by general consent been adopted as the medium for exchange, it would be the most convenient to estimate the values of commodities by this common medium. And when money, or gold and silver, had become the instrument of commerce, the exchangeable value of every commodity would more frequently be estimated by the quantity of money than by the quantity either of labor, or of any other commodity, which could be had in exchange for it. It is not surprising, therefore, that money should at length come to be considered the real standard or measure of value, while it is the mere representative which is continually fluctuating with the quantity of labor it represents, at one time, a greater, and at another time, a smaller amount of money being exchanged for the same quantity of labor. Gold and silver, like other commodities, vary in value, and the standard by which they also are measured is the labor employed in their production. Their value, it is true, like that of every other commodity, is varied by extrinsic causes, such as abundance and scarcity, and the variations in supply and demand, but the general principle holds as true with regard to them, as to other products which are the result of labor, and indeed the apparent exception when critically analyzed adds increased confirmation to the general principle.

The value of gold and silver had been continually varying from century to century previous to

the discovery of America and it is estimated that that event reduced their value in less than one century to about a third of what it had been before. It is however generally believed that their value has been for some time nearly stationary, although by some it is supposed that the diminution is still going on gradually. It is certain, however that their value unless by local causes, varies but little from year to year, and during portions of the same year.

The values of equal quantities of commodities vary greatly for short periods of time, because the same quantities of labor often produce very different results. A favorable season, crowning the labors of the husbandman with success, has the effect to diminish the value of any given quantity of the products of agricultural industry, while an unfavorable season has a contrary effect. A bushel of corn, therefore, raised in a productive season, its value being measured by the labor which produced it, would be of much less value than a bushel raised in an unproductive season; because, having a common measure of value, the former represents a smaller portion of that measure than the latter. But, for lengthy periods the products of equal quantities of labor will of course be more nearly equal, and their values, consequently, more nearly the same.

Equal quantities of labor, on the contrary, may at all times and all places, be said to be of equal value. What has cost the laborer the same amount of manual exertion—the same degree of skill and dexterity, and the employment of the same portion of time, must always, in his ordinary state of health, be of the same value to him. And it does not affect the principle that he sometimes obtains a greater, and sometimes a smaller quantity of goods with the same amount of labor, as the price, or value, which he pays, is still the same, and in this case it is the value of the commodities which varies, and not that of the labor which purchases them. But it may be thought that although equal quantities of labor are always of the same value to the laborer, they are not so to the individual who exchanges his money or commodities for their labor, as he purchases the same quantity of labor sometimes with a greater, and sometimes with a smaller, quantity of his commodities: but in reality the variation in value is in the money and commodities, which have been produced, in the one case, by a smaller, and in the other by a greater quantity of labor, so that value is still exchanged for value.

Labor, therefore, being the originator or producer of all exchangeable value, is the only real standard by which we can, with any degree of accuracy, compare the values of different commodities at all times and at all places. Money is the nominal standard only.

The products of the same amount of labor, varying greatly from year to year, form a very uncertain standard of comparison for short periods of time, although, if lengthy periods be taken the products of equal amounts of labor will be of nearly equal value. But although gold and silver form a less accurate standard or measure of value than the products of industry for lengthy periods of time, yet from year to year they are a less variable standard, because equal quantities of them, during the same year, will more nearly command the same quantities of labor. Hence gold and silver form a more convenient and more practically useful measure of value than either labor or commodities. It must still, however, be borne in mind, that labor, and not money, is the real standard or measure of all exchangeable value.

The amount of labor and skill expended in the creation of value is termed *cost*, and it is therefore the cost of an article which determines its exchangeable value. But there are temporary causes, not, however, affecting the general principle, which for short periods of time create a variation from this standard, and elevate the exchangeable value above, or depress it below the cost. The causes of this variation we will now proceed briefly to illustrate.

I. If, during one season, a larger quantity of flour were produced than was sufficient to supply the wants of the population, and all demands for the article, the price of flour would fall; that is, the less amount of other articles would a barrel of flour obtain by exchange. And this effect would be the same, although a barrel of flour *cost* no less this year than in the year previous. Hence, *the greater the supply the less the exchangeable value.*

II. If, while the cost of producing flour remained the same, only half the quantity necessary to supply the wants of the population were brought into market, the price of flour would rise: and hence, *the less the supply the greater the exchangeable value.*

III. If, on account of the high price offered for flour in some foreign country, it should become profitable to export it, the great demand for flour would immediately raise the price, and hence, *the greater the demand the greater the exchangeable value.*

IV. If the demand for flour should suddenly cease in a great measure, while there were large quantities in the market, the holders would nevertheless wish to dispose of their flour, and there would arise a competition among them; each one striving to sell; the price of flour, consequently, would fall, and hence, *the less the demand, the less the exchangeable value.*

These principles operate to keep the supply of manufactured articles nearly equal to the demand. For if the supply of an article be more than suffi-

cient to meet the wants of the community, the increased supply will have a tendency to reduce the price below cost, and the manufacture of that article will cease until the supply is reduced equal to the demand. If the supply of an article be less than the demand for it, more persons will engage in its production, and the natural tendency will be to overstock the market; hence we see why a scarcity is likely to be followed by an excess, and high prices by low prices, and the contrary.

Articles which will soon perish if undisposed of, are subject to greater fluctuations in exchangeable value than those of more durable materials. Fish and fruits, if kept long on hand, will soon perish, and the holder will dispose of them for less than their cost rather than lose the whole. But iron, being a durable article, will not be subject to such variations, for although it be kept on hand for years, it loses none of its intrinsic value.

Articles which require a long time for their production, are subject to greater variations in exchangeable value than articles which may be produced on demand. If there be a scarcity in the article of hats, the price will not rise rapidly, because every person knows that the demand may be supplied upon short notice. But if there be a scarcity of wheat in the country, the price of that which remains will rise rapidly.

It would not be difficult to show that the preceding are only apparent exceptions, arising out of temporary circumstances and that if these very causes continue to operate they will result in these individual cases, in the establishment of the general principle, that labor is the standard of value.

With these preliminaries—the nature of the subject—an explanation of terms—and some general principles, we are prepared for the division into which the subject naturally resolves itself. The subject of political economy may be divided into four parts. The first will treat of the *production* of wealth—the second of its *distribution* among the joint operators or producers—the third, of its *exchange* among the members of society, and the fourth, of its *consumption* or destruction.

EARLY COMMERCE OF HOLLAND.

The genius and talent of the Dutch for commercial affairs are universally acknowledged. At one period they nearly engrossed the trade of the world. Some of the towns of Holland were members of the Hanseatic League, soon after its formation in the thirteenth century, and they succeeded this association in the trade of the Baltic. In the fifteenth century, it is stated that 300 ships arrived twice a year at Amsterdam from Dantzic and Livonia only; and the Baltic trade was constantly increasing for a whole century afterward. The Pensionary De Witt, writing in the seventeenth century, says that the Dutch herring-fishery gave employment to 6400 vessels, and 112,000 seamen; and that the whole number dependant upon it for support, including ship-builders, net-makers, coopers, and others engaged in the process of curing and in various ways, amounted to 450,000 persons. The commercial marine consisted at this time of 10,000 sail and 168,000 seamen. The system of marine insurance was conducted on most intelligent principles in Holland in the sixteenth century; in 1602 the Dutch East India Company was formed; the famous bank of Amsterdam, one of the first institutions of the kind in Europe, was opened in 1609; and in 1621 the merchants formed a West India Company. In the same century the coasting trade of Spain was almost entirely carried on in Dutch vessels. After the decline of the naval power of Spain, Dutch vessels were hired to trade with the Spanish possessions in South America. The Dutch indeed monopolized the carrying trade of nearly the whole of Europe, and maintained a navy which cost England greater efforts to subdue than the Spanish Armada. Thirty or forty years after the commerce of Holland had begun to decline, Sir William Petty estimated the tonnage of the various maritime powers of Europe at 2,000,000 tons; of which Holland possessed 900,000; England 500,000; Sweden, Denmark, Hamburg, and Dantzic, 250,000; Spain, Portugal, and Italy, 250,000; and France 100,000.

It is interesting to mark the causes of that commercial pre-eminence which the Dutch enjoyed for so long a period, and equally so to inform ourselves touching those which led to its decay. Without attending to the former, it will not be easy to comprehend how a people, placed apparently in the most unpromising circumstances, should be able to conquer formidable natural obstacles and to raise themselves to a higher pitch of prosperity than countries enjoying far greater natural advantages.

Let us conceive a country whose only attraction, even in its present improved state, consists in the evidence which is everywhere to be found of the unwearied industry and perseverance of the inhabitants. When first peopled, it could have been little better than a marsh or morass, which secured those who resorted to it from their enemies, and thus afforded them the opportunity of applying themselves to those arts which were capable of improving their condition. The neighbouring seas abounded in fish, and Cæsar describes the Bataviæ, who then inhabited Holland, as deriving their subsistence from the fishery. They were driven to this element for food, the soil being unfavorable to cultivation, while it was only preserved from inundation by constant exertion in constructing and keeping in repair the embankments which confined the ocean within safe bounds. Thus labor and frugality, the true sources of wealth, were imposed upon them as the conditions of their existence. As their wants increased, not only the materials for clothing but food for their support, could only be obtained in sufficient

abundance by intercourse with other countries; and the multiplicity of their wants necessarily directed their energies toward commerce and navigation, as, at an earlier period, they had been forced to look to the sea for a supply of food.

In the fourteenth century an individual discovered the mode of curing and preserving herrings, and this valuable commodity, which could be exchanged for the products of every country in Europe, gave a great impulse to the shipping and trade of Holland, which soon became of greater extent than any country had yet possessed in modern times. "Yet," as Sir William Temple remarks, "they have no native commodities toward the building or rigging of the smallest vessels, their flax, hemp, pitch, wood, and iron coming all from abroad, as wool does for clothing their men and corn for feeding them." Their wants exceeded those which the natives of other countries experienced, and yet, wanting everything, they were most abundantly supplied with all things by their commercial activity; and, to quote the same writer, Holland grew rich "by force of industry, by improvement and manufacture of all common growths; by being the general magazine of Europe, and furnishing all parts with whatever the market wants or invites; and by their seamen being, as they have been properly called, the carriers of the world."

It is singular that Amsterdam, the most incommodious port of Holland, should have become the greatest resort of trade and shipping, but here flowed the trade of Europe and India once enjoyed by Lisbon and Antwerp, while Helvoetsluys, the only tolerable harbor on the coast, was without any trade. The whole history of Dutch commerce, however, teaches us not to rely too much upon natural advantages or to attribute too little to the efficacy of moral causes. Antwerp was more favorably situated than Amsterdam; it was also, like Amsterdam, near the mouths of great rivers, and in the centre of Europe, which fitted it to be an emporium for the north and south; but the horrors of war and the spirit of tyranny ruined the trade of Antwerp, and in 1585 the city was taken, after a siege by the Spaniards. Holland, the common refuge of the oppressed, where liberty of conscience could be enjoyed and equal laws prevailed, naturally profited by the fall of Antwerp. "Throughout the whole course of all the persecutions and oppressions that have occurred in other countries, the steady adherence of the republic to this fundamental law (the free exercise of different religions) has been the cause that many people have not only fled, hither for refuge, with their whole stock in ready cash, but have also settled and established many trades, fabrics, manufactures, arts, and sciences in this country, notwithstanding the first materials for the said fabrics and manufactures were almost wholly wanting in it, and not to be procured but at a great expense from foreign ports." In the seventeenth century, when the prices of provisions were higher in Holland than in England, the Dutch undersold the English manufacturer in foreign markets. Our cloths were sent to Holland in a white state, as the Dutch mode of dyeing and dressing them was superior to our own, although this was our great staple manufacture. The population of Holland was, in truth, more orderly and industrious, and better accustomed to continuous labor than the English workmen of two centuries ago; and it was therefore natural that they should reap all the advantages of their superiority.

In addition to the confidence inspired by the constitution and form of government, the mode in which justice was administered, the care to preserve peace and tranquillity at home and abroad, and the probity of public men,—moral causes which contributed to increase the trade and opulence of the country,—there were others which deserve also to be mentioned.

Holland made the nearest approach of any country to freedom of trade. "The lowness of their customs and easiness of paying them," says Sir William Temple, "with the freedom of their ports, invite both strangers and natives to bring commodities hither, not only as to a market but to a magazine where they lodge till they are invited abroad to other and better markets." The strict regulations enforced in preparing commodities for export enabled them to obtain the highest prices in foreign markets. When Sir William Temple, wrote, there had been seventy "placarts" issued respecting the mode of curing, pickling, and barrelling herrings. The division of employments also promoted the success of commercial enterprise. Thus Amsterdam was more particularly engaged in the East India, Spanish, and Mediterranean trade; Flushing, in the West India trade; Middleburgh, in the wine trade with France; Tervere, in the Scotch trade; Dort was the mart for English goods and Rhenish wines, and Rotterdam for English and Scotch goods and French wines. Friezland was engaged in the Greenland fishery, and Enkhuisen and Mazlandsluys in the herring-fishery. Leyden was famous for its manufacture of silken stuffs; Haarlem, for linens and mixed stuffs; Delft, for beer and porcelain; and Saardam, for ship-building.

There were also several adventitious causes which contributed to swell the stream of commerce. While Holland was acting upon maxims which render trade flourishing, other countries were often ravaged by war or oppressed on account of religion, and had not, like Holland, been compelled, by their natural unproductiveness, to attend to every circumstance which could encourage commerce. The shipping of Holland, which by the middle of the sixteenth century had nearly outgrown the demands of trade in Europe, found soon afterward, in America and the East Indies, fresh sources of profitable employment; and large possessions in these parts, which Spain had mismanaged, fell into the hands of the Dutch with little trouble, when, having beaten the Spaniards at home, they turned their arms toward the settlements of their enemies abroad.

In the course of time so much capital had accumulated that money could be borrowed by the government at two per cent. The bank of Amsterdam was in high credit, and attracted capital from every country for better security. There was always money to be obtained for all sorts of useful works, as bridges, roads, canals, &c.;

The Weighing-House, formerly called St. Anthony's Gate, at Amsterdam.

and when there was scarcely any room left for its application at home, it flowed, as Adam Smith has remarked, to the most distant employments, in loans to foreign countries, and in attempts to open new channels of trade. In Sir William Temple's time, the difficulty of finding advantageous investments was so great, that, when the government paid off any part of its funded debt, the creditors received their capital "with tears, not knowing how to dispose of it to interest with such safety and ease." At a later period, Smith notices that people of capital were themselves compelled to superintend its employment in trade, and it was "unfashionable" for a man not to be engaged in some trade or commercial occupation.

The trade of Holland is still very extensive, but we have not space for details in the present notice. Amsterdam maintains its ancient pre-eminence, but several other ports have sunk into comparative insignificance. Penny Mag.

ANCIENT COINS.

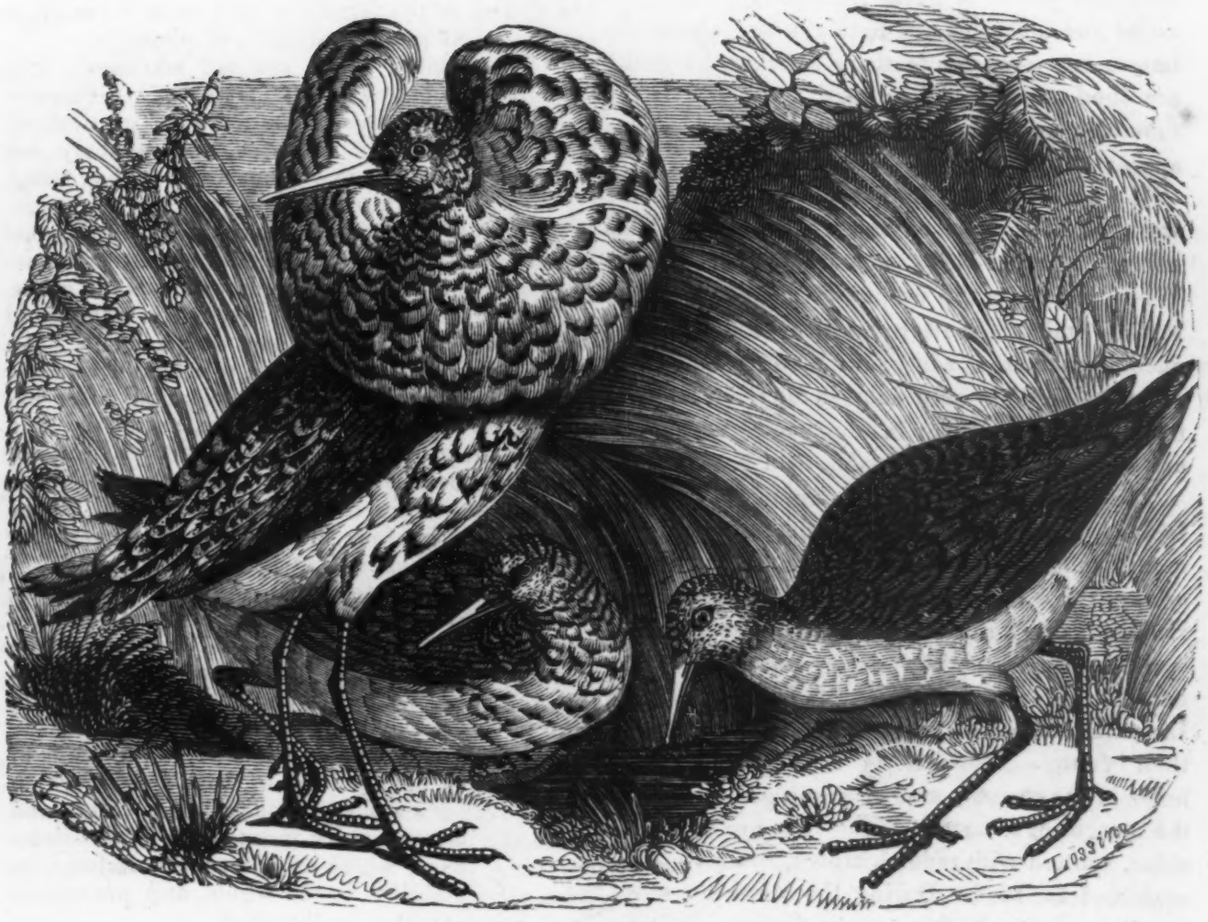
In removing some old wooden buildings recently in Charleston, South Carolina, the following coins were disinterred from the repose of more than a century.

1. A coin about the size of a half dollar, one side a crowned head in the centre, and "Gulielmus III. Dei Gra." and on the other side, a vignette or compound coat of arms, representing, we believe, the three Lions Rampant of England, the Thistle of Scotland, the Harp of Green Erin, and a defaced emblem, which probably designated the Princedom of Wales, or the Kingdom of France—the Quadruple Crown—and along the circular border, 1690, Mag. Britain: et Hib. Rex.

2. A coin, so clipped as to form an irregular figure, which may be termed a catecornered square, and yet not a diamond, with two angles, also clipped, so as to make an irregular hexagon. It was originally a dollar, from the Spanish mint, with figured work on the upper and lower faces, instead of the present well known devices, and struck in 1733, during the reign of "Philip V. Hispan. et Indiarum Rex."

A moment of time is a monument of mercy.

NATURAL HISTORY.



Combattants.

COMBATTANTS.

The name of Combattant is given by the majority of naturalists to the bird represented in our engraving, because of its fighting character. As the females of this species rarely share in the struggles which the males enter upon, some authors suppose that love alone—a sort of chivalric gallantry—is the cause of the warlike humor of these birds. This, however, is incorrect.

In the months of April and May, this propensity of the male combattants is more strongly exhibited than at any other period of the year. The assaults are often commenced by two individuals, which generally operates as a signal for the whole troop to join in the tournay. These affrays are more frequent and furious in the morning and at evening, although they often commence a fight during the day, none of which ever terminate without spilling some blood. The attendant females are never on the battle-ground during the contest, but, by their cries they increase the ardor of the rivals; and when the vanquished are put to flight, they pay homage to the victors by obsequious caresses. The females frequently resume their cries, by which the fugitives are instantly reanimated with fresh courage and reenter the arena against new champions with an ardor that seems always the same.

At this period of the spring, when the ebullition of feeling is strong, the male combattants have a kind of collar or necklace which serves as defensive armor and a dress of which they seem proud. This collar is composed of long feathers, strong and thickly set, which may be bristled up in a moment when the bird is angry or is preparing for combat. These feathers are ordinarily shed about the first of June.

The color and form of the necklace varies in different individuals, during the whole period of its growth. With some, the color is red, others brown, others a mixture, and in some a fine dark violet sometimes tipped with red spots. Occasionally one is seen with a collar entirely white. It may be remarked that at this particular season, the head is divested of feathers and covered with small bloody tubercles, in infinite numbers, extending from the eyes to the top of the head and adjacent parts.

It is with great difficulty that the males and females can be distinguished at any other season than this period of great irritability. Then the collar and tubercles are distinguishing characteristics; but when the feathers forming the collar are shed, small feathers take the place of the tubercles upon the head, and male and female appear alike.

We have said that love is not the cause of the warlike disposition of the combattants. This effect is produced by a more trifling motive. When put upon the corner of a spot of green turf, on which is scattered a little food, the presence of spectators will excite a combat, and this seems to be their only subject for rivalry. The females are oftentimes in a quarrelsome humor, and are then more redoubtable than the males.

The combattants are quite common in Sweden, Iceland, Russia and Siberia, and some of the mountainous regions of southern Europe. In the spring they migrate southward, and arrive in Holland and France in April, and proceeding onward to England they there collect in great numbers in the month of May, especially in Lincolnshire, where they build nests and rear their young. Their nests are made in small holes in the ground, among green grass, or near the margin of a morass. The eggs are of an ash color, spotted with reddish brown, and are highly eestemed for food. During the summer season the flesh of this bird is sought for, as a delicate morsel. The bird-catchers ensnare them during their general battles. The plumage of the combattants is various, especially among the males. Their size, ordinarily, is ten or eleven inches in height.

TAILOR BIRDS.

It seems no less difficult to conceive, in what manner a bird could make its bill perform the office of a needle, than that of a weaver's shuttle; yet that this is actually done we have unquestionable evidence, both in the workmanship of the nests of more than one species, and in the ocular testimony of observers who have watched the little mechanics at work. We are, however, more deficient in details upon the process of forming nests by sewing, than in the case of most of the other mechanical operations of birds described in this work, and therefore our notices must be brief. The most perfect of these descriptions is given by Wilson, respecting the nest of the orchard starling (*Icterus mutatus*), a bird which has created no small confusion among systematic writers, in consequence of the male not arriving at its mature plumage till the third summer, which circumstance has caused it to be mistaken by Buffon and Latham for the female of the Baltimore, (*Icterus Baltimore*). Wilson has cleared up these mistakes in a luminous and satisfactory manner, by colored figures of the female as well as of the male, in its three different gradations of plumage.

"These birds" (the orchard starlings), says Wilson, "construct their nests very differently from the Baltimores. They are so particularly fond of frequenting orchards, that scarcely one orchard in summer is without them. They usually suspend their nests from the twigs of the apple-tree, and often from the extremities of the outward branches. It is formed exteriorly of a particular species of long, tough, and flexible grass, knit or sewed through and through in a thousand directions, as if actually done with a needle. An old lady of my acquaintance, to whom I was one day showing this curious fabrication, after admiring its texture for some time, asked me, in a tone between joke and earnest, whether I did not think it possible to teach these birds to darn stockings. This nest is hemispherical, three inches deep by four in breadth; the concavity scarcely two inches deep by two in diameter. I had the curiosity to detach one of the fibres or stalks of dried grass from the nest, and found it to measure thirteen inches in length, and in that distance was thirty-four times hooked through and returned, winding round and round the nest! The inside is usually composed of wool, or the light downy appendages attached to the seeds of the platanus occidentalis, or buttonwood, which form a very soft and commodious bed. Here and there the outward work is extended to an adjoining twig, round which it is strongly twisted, to give more stability to the whole, and prevent it from being overset by the wind.

"When they choose the long pending branches of the weeping-willow to build in, as they frequently do, the nest, though formed of the same materials, is made much deeper and of slighter texture. The circumference is marked out by a number of these pensile twigs, that descend on each side like ribs, supporting the whole, their thick foliage at the same time completely concealing the nest from view. The depth in this case is increased to four or five inches, and the whole is made much slighter. These long pendent branches, being sometimes twelve and even fifteen feet in length, have a large sweep in the wind, and render the first of these precautions necessary to prevent the eggs or young from being thrown out; and the close shelter afforded by the remarkable thickness of the foliage is no doubt the cause of the latter. Two of these nests, such as I have here described, are now lying before me, and exhibit not only art in the construction, but judgement in adapting their fabrication so judiciously to their particular situations. If the actions of birds proceeded, as some would have us believe, from the mere impulses of that thing called instinct, individuals of the same species would uniformly build their nests in the same manner, wherever they might happen to fix them; but it is evident from these just mentioned, and a thousand such circumstances, that they reason, *à priori*, from cause to consequences, providently

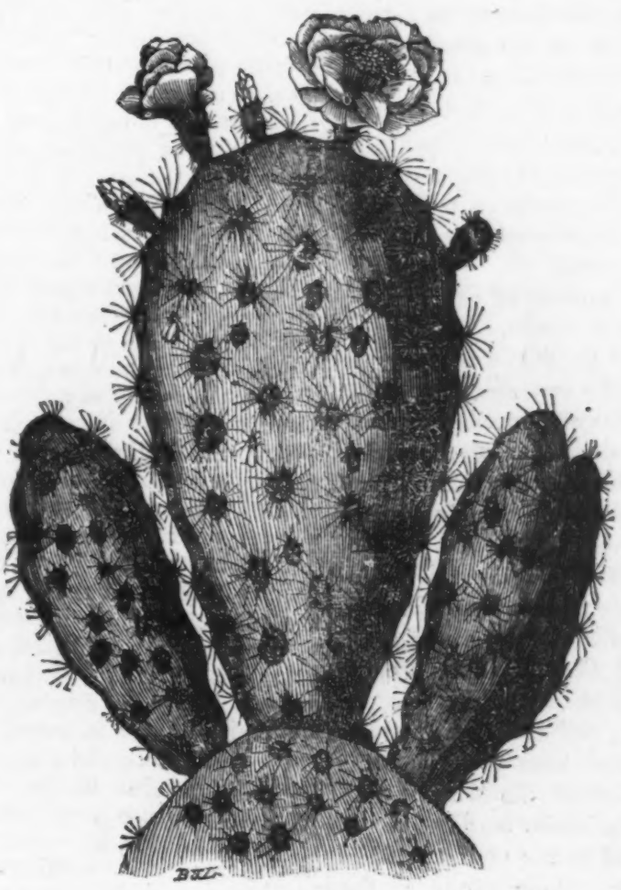
managing with a constant eye to future necessity and convenience."

According to Buffon and Latham, the bonana starling (*Icterus bonana*) is another of the tailors. It inhabits Martinico, Jamaica, and other West India islands, and builds a nest of a very curious construction, if it can justly be called building. The materials which it uses are fibres and leaves, which it shapes into the fourth part of a globe, and sews the whole with great art to the under part of a bonana leaf, so that the leaf makes one side of the nest.

But the most celebrated bird of this division, is the one which in the East is, *par excellence*, named the tailor-bird, (*Sylvia sutoria*, Lath), the description of whose performances we would be apt to suspect for an Oriental fiction if we had not a number of the actual specimens to prove their rigid authenticity. We do suspect, however, that these very specimens have misled European naturalists a step beyond the truth in their accounts of its proceedings. "The tailor bird," says Darwin, "will not trust its nest to the extremity of a tender twig, but makes one more advance to safety by fixing it to the leaf itself. It *picks up a dead leaf and sews it to the side of a living one*, its slender bill being its needle, and its thread some fine fibres; the lining consists of feathers, gossamer, and down; its eggs are white; the color of the bird light yellow; its length three inches; its weight three sixteenths of an ounce; so that the materials of the nest and the weight of the bird are not likely to draw down a habitation so slightly suspended."

CACTUS.

The *Cactus* or melon-thistle, is a genus of stove succulents, natives of the driest parts of tropical countries. Linnæan class and order, *Icosandria Monogynia;* natural order, *Cacteæ*. Generic character: calyx bell-shaped, imbricated; corolla, petals six or more inserted on the calyx; stamens numerous, joined to the calyx; filaments awl-shaped; anthers oval, and two-celled; stigma many cleft, berry many seeded. These plants being of remarkable character attracted the notice of travellers in South America, where they are chiefly found, and being tenacious of life, were easily transported to Europe and to the United States where some of them have been long cultivated in hot-houses. They are mostly destitute of leaves, and composed of thick fleshy stems entire or jointed, and of the most grotesque shapes. They are spiny; either ranged along the prominent angles of the stem, or growing in tufts on the surface. The Turk's cap (*C. melocactus*) is a regularly formed and curious production; the body being ribbed like a melon, with tufts of short spines along the angles, and bearing its flowers and fruit round the upper part of the tassel of the cap. Full grown plants are sometimes met with in the West Indies two feet in diameter. The interior



Cactus.

is a soft green pulp, very full of moisture, and never changing to a woody consistence. The fruit of some of them is eatable, and resembles in shape and size, the fig of Europe. This genus, which formerly comprised a great many plants supposed to be species, is now so much divided, that very few real cacti remain.

THE OREGON TERRITORY.

Concluded.

In our last number we noticed briefly the validity of the claim of the United States to the lawful occupation of the Oregon Territory west of the Rocky mountains, and its political importance. We purpose now to take a view of its geographical features, and its vast resources.

The most prominent features in this region, are the Rocky mountains, and their intersecting ridges. They form one branch of the Andes which commences at the southern extremity of South America, and after following the borders of the Pacific the whole length of that portion of America, they pass through the Isthmus of Darien, Guatamala, Mexico, and north through the Oregon toward the arctic regions. The range passing through the Oregon, is called Rocky mountains. They rise abruptly to a great height, on the western side of the great American plains, and have doubtless formed, at some remote period, the boundary of a vast internal sea, whose bed was the valley of the Mississippi. On their western side, the descent is by regular terraces to the ocean. The northern portion of this great chain of hills gives origin to some of the noblest rivers in the world.

The Rocky mountains consist of primary formations chiefly of igneous rocks. On the adjacent plains, especially on the west, are extensive volcanic tracts, and a considerable portion of this section of country is composed of primary mountains and sandy plains, until we approach the borders of the Pacific. Many thermal and brine springs have been found, containing medicinal virtues of a high character; and west of the mountains are large beds of rock salt. Gypsum is found in abundance in many parts, and in the vicinity of the Platte river, are many fossil remains. The banks of the Missouri are, in many places, formed of limestone cliffs, two and three hundred feet high; and in some districts good bituminous coal has been found. Some distance above the junction of the Missouri and the Platte, are high perpendicular bluffs of chalk. Pure sulphur is also found in the vicinity of the Great Salt Lake, and the whole range of the Rocky mountains is supposed to abound in iron.

All travellers agree in portraying the country, west of the mountains in the most glowing colors, and represent it as composed of a variety of hill and dale, fertile soil, magnificent forests, and pure irrigating streams. The climate is spoken of as peculiarly benign; and during the whole year, a perpetual spring seems to reign, so little is it subject to the extremes of heat and cold. Lewis and Clarke who spent a winter and spring there represents the weather as very mild. They had a few frosty nights, but saw no ice, and the weather continued so warm that they were obliged to smoke their meat to preserve it. In March the leaves put forth, the flowers sprang up, and when on the thirtieth of that month they took their departure, the grass was sixteen inches in height on the river bottom.

Mr. Irving in his "Astoria," speaking of the climate of this region says:—"A remarkable characteristic of the country west of the Rocky mountains, is the mildness and equability of the climate. That great mountain barrier seems to divide the continent into different climates even in the same degree of latitude. The rigorous winters and sultry summers, and all the capricious inequalities of temperature prevalent on the Atlantic side of the mountains, are but little felt on their western declivities. The country between them and the Pacific is blessed with *milder* and *steadier* temperature, resembling the climate of parallel latitudes in Europe. In the plains and valleys, but little snow falls throughout the winter, and usually melts while falling. It rarely lies on the ground more than two days at a time, except on the summit of the mountains. The winters are rainy rather than cold. The rains for four months, from the middle of October to the middle of March, are almost incessant, and often accompanied by tremendous thunder and lightning. The winds prevalent at this season are from the south and southeast, which usually bring rain. Those from the north to the southwest are the harbingers of fair weather and a clear sky. The residue of the year, from the middle of March to the middle of October, an interval of seven months, is serene and delightful. There is scarcely any rain throughout this time, yet the face of the country is kept fresh and verdant by nightly dews, and, occasionally, by humid fogs in the mornings. These are not considered prejudicial to health, since both the natives and the whites sleep in the open air with perfect impunity. While this equable and bland temperature prevails throughout the lower country, the peaks and ridges of the vast mountains by which it is dominated, are covered with perpetual snow. This renders them discernible at a great distance, shining, at times, like bright summer clouds; at other times, assuming the most ærial teints, and always forming brilliant and striking features in the vast landscape. The mild temperature prevalent throughout the country is attributed, by some, to the succession of winds from the Pacific ocean, extending from latitude twenty degrees, to at least fifty degrees north. These temper the heat of summer, so that in the shade no one is incommoded by perspiration.

They also soften the rigors of winter, and produce such a moderation in climate that the inhabitants can wear the same dress throughout the year."

The climate is well adapted to the cultivation of citrons, oranges, lemons, cotton and almost every variety of vegetables, fruits and flowers. In fact it may be almost considered tropical, though lying within the precincts of the temperate zone. The soil presents every variety, and is well watered by the great Columbia and its numerous tributaries. As a grazing country, it is believed by all who have visited it, to be the finest in the world. Thousands of horses roam free over the vast plains bordering on the Pacific, and are remarkable for their elegance of form, activity and durability. They are supposed to be a race indigenous to the country. The most of them belong to the natives, but in some regions they are found in a perfectly wild state. At the present, an elegant horse may be purchased of the natives for a few beads or some other trinkets.

Wild sheep are found in abundance in the timbered parts of the Rocky mountains. They are about the size of our common sheep, of a white color, and fine wool. The timber in the valley of the Columbia is large and abundant.

The operations, resources and influence of the Hudson's Bay Company, which has so long monopolized the extensive fur trade of the Northwestern region of this continent, are described as follows by Mr. Slacum who was employed by our government in 1836, in collecting information concerning that portion of the Oregon Territory which lies west of the Rocky Mountains.

"I shall endeavor," he says, "to point out the enterprise of this company, and the influence they exercise over the Indian tribes within our acknowledged lines of territory, and their unauthorized introduction of large quantities of British goods within the territorial limits of the United States. Fort Vancouver, the principal depot of the Hudson Bay Company west of the Rocky Mountains, stands on a gentle acclivity, four hundred yards from the shore, on the north bank of the Columbia, or Oregon river, about one hundred miles from its mouth. The principal buildings are enclosed by a picket forming an area of seven hundred and fifty by four hundred and fifty feet. Within the pickets there are thirty-four buildings of all descriptions, including officers' dwelling-houses, workshops for carpenters, blacksmiths, wheelwrights, coopers, tinners, &c., all of wood, except the magazine for powder, which is of brick. Outside, and very near the fort, there are forty-nine cabins for laborers and mechanics, a large and commodious barn, and seven buildings attached thereto; a hospital and large boat-house on the shore, six miles above the fort. On the north bank the Hudson Bay Company have erected a saw-mill on a never failing stream of water that falls into the Columbia; cuts two thousand to two thousand and four hundred feet of lumber daily; employs twenty-eight men, chiefly Sandwich Islanders, and ten yoke of oxen; depth of water four fathoms at the mill, where the largest ships of the company take in their cargoes for the Sandwich Islands' market.

"The farm at Vancouver contains, at this time, about three thousand acres of land, fenced and under cultivation, employing generally, one hundred men, chiefly Canadians and half-breed Iroquois. The mechanics are European. These, with the factors, traders, clerks, and domestics, may be estimated at thirty. The laborers and mechanics live outside the fort in good log cabins; two or three families generally under one roof; and as nearly every man has a wife, or lives with an Indian or half breed woman, and as each family has from two to five slaves, the whole number of persons about Vancouver may be estimated at seven hundred and fifty to eight hundred souls. The police of the establishment is as strict as in the best regulated military garrison. The men are engaged for the term of five years, at the rate of seventeen pounds to fifteen pounds per annum; but as the exchange is reduced to currency at the rate of five shillings to the dollar, the pound sterling is valued at four dollars; hence the price of labor is $5 67 to $6 67 per month.

"*Trade, &c.* A large ship arrives annually from London, and discharges at Vancouver. Cargo, chiefly coarse woollens, cloths, baizes and blankets; hardware, cutlery, calicoes, cottons, and cotton handkerchiefs; tea, sugar, coffee, and cocoa; tobacco, soap, beads, guns, powder, lead, rum, playing-cards, boots, shoes, ready made clothing, &c.; besides every description of sea stores, canvass, cordage, paints, oils, chains and chain cables, anchors, &c., to refit the company's ships that remain on the coast. These are the ship Nereide, the brig Llama, the schooner Cadborough, and sloop Broughton; the steamboat Beaver, of one hundred and fifty tons, two engines of thirty horse power each, built in London last year. These vessels are all well armed and manned; the crews are engaged in England, to serve five years, at two pounds per month for seamen. The London ship, with the annual supply, usually arrives in the Columbia in early spring, discharges, and takes a cargo of lumber to the Sandwich Islands; returns in August to receive the furs that are brought to the depot (Fort Vancouver) once a year from the interior, *via* the Columbia river, from the Snake country, and from the American rendezvous west of the Rocky mountains, and from as far south as St. Francisco, in California. While one of the company's vessels brings in the collections of furs and peltries made at the different depots along the coast of the north, the steamboat is now being employed in navigating those magnificent straits from Juan de Fuca to Stickern. Immense quantities of furs, sea otter, beaver, martin, and sable, can be collected along the shores of these bays and inlets. The chief traders at Narquallah, in forty-seven degrees thirty minutes, Fort, Langley, in forty-nine degrees fifty minutes, Fort Mc Laughlin, in fifty-two degrees, ten minutes, Fort Simpson, in fifty-four degrees forty minutes north, purchase

all the furs and peltries from the Indians in the vicinity and as far as New Caledonia, in the interior, and supply them with guns, powder, lead, tobacco, beads, &c.; all of which supplies are taken from the principal depot at Fort Vancouver.

"An express, as it is called, goes out in March, annually, from Vancouver, and ascends the Columbia, nine hundred miles in batteaux. One of the factors, or chief traders, takes charge of the property, and conveys to York factory, on Hudson bay, the annual returns of the business conducted by the Hudson Bay Company west of the Rocky mountains, in the Columbia district. This party, likewise, conveys to the different forts along the route, goods suitable to the Indian trade. Other parties take up supplies, as they may be required, to Wallawallah, two hundred and fifty miles above Vancouver; to Colville, six hundred miles above; to the fort, at the junction of Lewis's river, seven hundred miles above; and to the south, to the Fort Mc Roys, on the river Umpqua, in latitude forty-three degrees fifty minutes north; and last year, chief-trader Mc-Leod took up to the American rendezvous, in about latitude forty-three degrees north, a large supply of British manufactures. This assemblage of American trappers and hunters takes place annually on the western side of the Rocky mountains, generally in the month of July, and amounts to from four hundred and fifty to five hundred men, who bring the result of their year's labor to sell to the American fur-traders. These persons purchase their supplies for the trappers at St. Louis; though, after being subject to the duties on these articles, (chiefly of British manufacture,) they transport their goods about one thousand four hundred miles by land, to sell to citizens of the United States within our acknowledged lines of territory. Last year they met a powerful opponent, in the agent of this foreign monopoly, chief-trader Mc Leod, who could well afford to undersell the American fur-trader *on his own ground;* first, by having the advantage of water communication on the Columbia and Lewis's rivers for a distance of seven hundred to eight hundred miles; and, secondly, by introducing the goods free of duty, which is equal to at least twenty-five to thirty per centum. But a greater evil than this exists in the influence the Hudson Bay Company exercises over the Indians, by supplying them with arms and ammunition, which may prove, at some future period, highly dangerous to our frontier settlements." * * *

"A council annually assembles at York factory, where reports from the different 'districts' east and west of the Rocky mountains are read and recorded, and their proceedings forwarded to London, to the Hudson Bay house. Chief factors and chief traders hold a seat at this council board, and Governor Simpson presides. It is here that every new enterprise is canvassed, expense and and probable profits carefully inquired into, as each member feels a personal interest in every measure adopted. If it is ascertained that in certain 'districts' the quantity of beaver diminishes, the trappers are immediately ordered to desist for a few years, that the animals may increase, as the wealth of the country consists in its furs; and so strict are the laws among many of the northern Indian tribes, that to kill a beaver out of season (*i. e.* in the spring or summer) is a crime punished with death. The enforcement of this law is strongly encouraged by the Hudson Bay Company. Not so careful, however, are the company of the territory not their own; on the contrary, they have established a fort and trading-house called 'Mc Roy's Fort,' on the river Umpqua, in forty-three degrees fifty minutes. This fine stream falls into the Pacific, (but is not laid down in any printed map;) ten thousand beaver skins are collected here, and double this amount brought out of the country adjacent, within our lines; and the Indians are encouraged to '*trap the streams*' at all seasons. From Wallawallah, Lewis's river, and the Snake country, all lying between forty-two degrees and forty-six minutes north latitude, fifty thousand skins are collected. The price of a beaver skin in the 'Columbia district,' is ten shillings, two dollars, payable in goods at fifty per cent. on the invoice cost. Each skin averages one and a half pound, and is worth in New York or London five dollars per pound; value of seven dollars and fifty cents. The beaver skin is the circulating medium of the country."

LEGAL PLEASANTRIES.

THEY originate more than half the current wit of the day in the Great West. There is a racy freshness, moreover, about the pleasantries of that region that is quite delightful. From a late Missouri journal we have clipped the following anecdote of an eminent legal gentleman of that State. If it be as new to the reader as it is to us, we will guaranty his favorable suffrage. Being once opposed to Mr. S——, late member of Congress, he remarked as follows to the jury upon a point of disagreement between them: "Here my brother S—— and I differ. Now this is very natural. Men seldom see things in the same light, and they may disagree in opinion upon the simplest principles of the law, and that very honestly; while, at the same time, neither can see any earthly reason why they should—and this merely because they look at different sides of the subject, and do not view it in all its bearings. Suppose, for illustration, a man should come in here, and boldly assert that my brother S——'s head, (here he laid his hand very familiarly upon the large chucklehead of his opponent,) is a *squash!* I, on the other hand, should maintain, and perhaps with equal confidence, that it is a head. Now, here would be a difference, undoubtedly, an honest difference of opinion. We might argue about it till doomsday, and never agree. You often see men arguing upon subjects as empty and trifling as this! But a third person coming in, and looking at the neck and shoulders that support it, would say at once that I had reason on my side; for if it was not a head, it at least occupied the place of one, and stood where a head ought to be." All this was uttered in the gravest and most solemn manner imaginable, and the effect was irresistibly ludicrous.

[Original.]

MICHAEL ANGELO BUONARROTI.

When the Arts of Design revived from their long sleep, at the close of what was most peculiarly to them the dark ages of the world, they came forth in the tattered mantle of buried Greece like an old man in renewed youth, and gathering strength at every step, soon reached another golden era. The mighty pioneers that re-opened the way left none behind to pursue it farther. The pencil and chisel of Michael Angelo—the grace and poetry and beauty that followed the inspired line of Raphael, and the palettes of Titian and Corregio, lie buried with them; for what has been achieved within the last three centuries beyond the noble monuments, that record their genius? That it is so, however, may be attributed to the absence of a demand for high art, and a due appreciation of it in our time, arising from various causes, rather than a deficiency of talent. If the occasion were again renewed and another Sistine Chapel and St. Peters, with the hundreds of churches, chapels and princely edifices that demanded the chisel and pencil in the age in which so many distinguished men in every branch of art flourished, in the palmy days of Rome, and Florence, and Venice—a galaxy of talent, now diverted into humbler walks, would burst forth from the precincts of the Vatican to the most distant confines of civilization.

About the close of the fifteenth century when Lionardo da Vinci stood at the head of all living artists, while Raphael was yet an infant in his cradle at Urbino, and about the time that Titian first left his native castle of Cadore to seek his fortune at Venice, a youth among the students of Ghirlandaio at Florence, of delicate form and features had already attracted some attention. The habits of his childhood and early education had been such as became a descendant of the counts of Canosa, and the boy stood among his companions, as in a path beneath his birthright. For little did his family imagine, as they thought of him in their distant castle of Caprese, how insignificant were the honors and titles of their house, compared with the glory that should be shed upon it in future ages, as the eyrie from whence had sprung a Michael Angelo.

His first step within the enchanted circle of art, was hand in hand with poetry. The light to his path was kindled at the altar of each muse, and its warmth and inspiration may be traced from his earliest essays in the garden of the Medici to the very dome of St. Peters. His mind and hand were schooled together from the first: they created and produced as if by a single impulse.

A head or rather mask of a laughing fawn, now preserved as a treasure in the Florentine museum, was the first essay in marble, known to have come from his hand: it was considered a wonder, at the time, for so young an artist, and elicited much praise. Fortune seemed to have spared Michael Angelo the pains and trials so commonly the fate of genius in the beginning of its career, and to have placed him at once on the high road in which he was destined to become so distinguished. Lorenzo di Medici found the young artist among the sculptors busily engaged in polishing his mask, and was struck with his appearance and address, as well as with admiration and wonder at the work on which he was employed. "But" said the prince, "you have restored to the old man his teeth when you ought to know that a person of that age has generally some wanting." The young sculptor, diffident of himself, on the departure of Lorenzo broke a tooth from the upper jaw and drilled a hole in the gum to indicate that it had fallen out. His modesty, and the deference paid to the criticism of the prince, sealed his fortune and secured to the world a Michael Angelo. Lorenzo adopted him into his family and treated him as his son. On the death of Lorenzo di Medici in 1492, he lost a kind friend and patron, and though he received some favor from his brother Pietro, there was little honor in his patronage, for he used to boast, that he had two extraordinary men in his house; Michael Angelo the carver, and a Spaniard who could outrun a horse. It can be well imagined, that such a house and such associations, were little suited to the habits or taste of a man of genius. He went to Bologna and Rome, and in both cities gained much reputation, by several great works that he executed in marble. While in Rome, he made a cartoon of St. Francis receiving the stigmata. Returning to Florence he next produced his colossal statue of David, another figure in bronze and a group of David and Goliath. These were well received and the Gonfaloniere Pietro Soderini ordered him to paint an historical picture to ornament the Hall of the Ducal palace, in competition with Lionardo da Vinci; or rather, it is said, the work having been consigned to Lionardo by a public decree, he desired to call in the assistance of Michael Angelo, who, although, then a young man, had acquired much reputation as a painter as well as sculptor. Jealousy, unfortunately, arose between them and each having his partisans, open war was the consequence. The world has long forgotten their discords, and there is so much to admire in the genius and character of both, that it willingly passes by their faults and foibles, to dwell upon the monuments of their genius they have left behind them. The subject selected by Lionardo was a battle of cavalry; that of Michael Angelo an event in the war between the Florentines and Pisans. He did not rest satisfied with representing the Florentines cased in armor and mingling with their enemies, but choosing the moment of the attack upon their

van, while bathing in the Arno, he seized the opportunity of representing many naked figures, as they rushed to arms from the water, by which he was enabled to produce a prodigous variety of daring foreshortenings, and attitudes the most energetic—in a word, the highest perfection of his own peculiar excellencies. This cartoon has perished, and report accuses Baccio Bandinelli of tearing it to pieces, either that others might not derive advantage from it; or because from partiality to Lionardo da Vinci and hatred to Buonarroti, he wished to remove a subject of comparison that might exalt the reputation of the latter above the former. This circumstance is not authentic, nor are we sufficiently interested in the supposed criminal to place him at the bar at this distant day. It is painful to revert to the personal altercations that have too frequently marked the career of distinguished artists in all times—often produced by the intervention of

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Note.—An anecdote is related of Michael Angelo which finely illustrates the force of prejudice in warping the judgement, and the injustice, if not folly, of viewing everything antique relating to the arts as transcendental.

When at Rome, some of the efforts of the young artist in sculpture were looked upon coldly by those who professed to be judges of merit, and he was even advised by some to abandon the pursuit. But the star of his destiny beamed brightly before him, and genius bade him follow its light. After leaving Rome he visited Venice and Bologna, and at each place studied, critically, specimens of antique sculpture. From Bologna he returned to Florence, where he executed a St. John and a Sleeping Cupid. The latter was pronounced by the connoisseurs of Florence equal to any of the antiques, and his friends advised him to send it to Rome and have it buried in a vineyard where it would soon be dug up. Angelo approved of this advice. After a little time it was disinterred, and all the connoisseurs were in ecstasies at having found such a precious specimen of ancient art. The Cardinal St. George purchased it for a considerable sum.

But Michael Angelo had broken off one arm of the statue, which he had preserved. This he took to Rome while all were delighted with the antique Cupid, and without much pains he proved, by its aid, that he was the author of the statue. As may well be imagined, the connoisseurs were furious at this exposition of their ignorance, but the Cardinal exhibited better sense. He invited the young artist to his house, where he remained for nearly a year; and the *antique* Cupid, with its arm restored, was presented to the countess Isabella d'Est, grandmother of the first duke of that name, in whose palace it remained for a long time.

The above outline sketch, illustrative of this anecdote, is from a painting by Angelo himself, now in the cabinet of the duke of Miranda at Naples.

[Editor.

over jealous and injudicious friends, who have long ago passed into oblivion, and left the censure upon the memory of a probably innocent victim of petty personal hostilities, in which he took no part.

On the accession of Pope Julius II., Michael Angelo was among the first invited to the papal court, where he received a commission to make a mausoleum. The plan was a parallelogram, and the superstructure was intended to consist of forty statues, many of which were to be colossal, intermixed with ornamental figures and basso-relievos in bronze, besides architecture. When this superb design was composed, it met the Pope's approbation, and Michael Angelo was desired to inspect St. Peter's for the purpose of finding a place where it could be erected. The artist fixed upon a spot; but the church itself being old and ill-adapted to such a magnificent structure, the Pope determined to pull it down and build a new one. Such is the origin of this celebrated edifice, the completion of which took one hundred and fifty years; and while it was going on, the Roman Catholic religion received a blow that shook its foundation. The work had not proceeded far before Michael Angelo, having experienced ill treatment from the officers of the Pope, left Rome in disgust and returned to Florence. After some time, at the intercession of friends, our artist consented to return to Rome where he found that the Pope had altered his mind, and that, instead of completing the mausoleum, he had determined to ornament the walls of the Sistine chapel. This building was already decorated with historical paintings which were now to be obliterated and replaced by others from the hand of Buonarroti, who had little inclination to the work, and besides was rather diffident of his powers. He wished to transfer the work to Raphael, but the Pope's mind was made up and he was constrained to undertake it. Unaccustomed to work in fresco, he invited some of the best painters in this branch from Florence, that they might assist, or rather, that they might instruct him. When he acquired what he deemed necessary, he effaced their labors entirely and set about the work without an assistant. When the task was about half finished, he exhibited it a little while to the public. He then applied himself to the other part, but proceeding

ISAIAH—from the Frescoes by Michael Angelo in the Sistine Chapel.

EZEKIEL—from the Frescoes by Michael Angelo in the Sistine Chapel.

more slowly than the impatience of the pontiff could endure, he was compelled to use quicker despatch, and without assistance finished the greater part then incomplete in twenty months. He worked without assistance, for such was the delicacy of his taste, that no artist could please him; and as in sculpture, every piercer, file, and chisel which he used, was the work of his own hands, so in painting, he prepared his own colors and did not commit the mixing and other manipulations to workmen or boys. On All Saint's day, the chapel was opened by a solemn mass in which the Pope officiated in person.

Here may be seen those grand and finely varied figures of the prophets and sybils, the style of which was pronounced by Lanuzzo, an impartial judge, because an artist of a different school, to be "the finest in the world." There, indeed, the dignity of the aspects, the solemn majesty of the eyes, a certain wild and uncommon casting of the drapery, and the attitudes, whether representing rest or motion, announce an order of beings who hold converse with the Deity, and whose mouths utter his inspirations. Amid this display of genius the figure most admired by Vasari, is Isaiah, "who, absorbed in meditation places his right hand on a book to denote where he had been reading; and with his left elbow on the book and his cheek resting on that hand, he turns round his head without moving his body, on being called by one of the children that are behind him; a figure which, if attentively studied, might fully teach the precepts of a master." No less science is displayed in his pictures of the creation of the world, of the deluge, of Judith, and in the other compartments of that vast ceiling. All is varied and fanciful in the garments, the foreshortenings, and the attitudes; all is novel in the compositions and the designs. He that contemplates the pictures of Sandro and his associates on the walls, and then raising his eyes to the ceiling, beholds Michael Angelo "soaring like an eagle above them all," can hardly believe, that a man not exercised in painting, in what may be considered his first essay, should so nearly approach the greatest masters of antiquity and thus open a new career to modern artists.

Three months after the completion of the ceiling of the Sistine chapel, the Pope died and was succeeded by Leo X., during whose pontificate Michael Angelo seems to have been strangely set aside, or rather his talents perverted to occupations

far beneath him. He had received instructions to construct a monument to Julius II., on a smaller scale than the mausoleum beforementioned, and he was anxious to complete the work when he was called from it by Leo to go to Florence, for the purpose of building the facade to the church of St. Lorenzo. He would have remonstrated, but submission was the lot even of Michael Angelo, in what has been so often termed the golden era of arts and artists. While at Carrara procuring the marble, he received a mandate from the Pope to go to Pietra Santa for that purpose. Buonarroti complied, but reported the marble of bad quality, and that there was no way of conveying it to Florence, without making a road over mountains and marshes to the sea. The Pope persisted and commanded him to proceed; the consequence of which was, that the talents of this great man were buried in those mountains during the whole pontificate of Leo, in raising stone and making a road; while Raphael was reaping a rich harvest of wealth and fame in the completion of his great works in the Vatican, and enjoying a salary besides of three hundred golden crowns, (which is more than Sir Christopher Wren had, near two centuries afterward, for designing and directing the great work of St. Paul's in London,) the favorite of the Pontiff, groom of his bedchamber, in expectation of the honors of the purple itself, and the companion of cardinals and princes—while Michael Angelo wasted away the years of a life so precious to the arts and to the world, in a marble quarry, and yet Leo X. was "a jealous friend and patron of the arts." That Raphael deserved all the honor and distinction showered upon him, no one can question, but that the sunshine should not have reached Buonarroti, is a mystery that we cannot now unravel.

(To be continued.)

The following lines are from the pen of Isaac Fitzgerald Shepard, who, we are informed, is a printer, and has but recently engaged in literary pursuits. He is now a student of Harvard university, Cambridge. A volume of his poems, from which the following is selected, has just been published in Boston.

THE DEAD.

———And hath the memory
Of other days no power upon thy soul?
B. B. Thatcher.

I love them still—the dead—
Beneath the grave's dark covert sleeping,
Where wild-wood flowers rich sweets are weeping
Above their silent bed,
So like the influence memory brings
Of friendship's ties unbroken,
When heart gave heart pure token
Of unfeigned happiness
The love-chained soul indwelling,
While heaven-waked thoughts were swelling,
With holy tenderness.
Then borne, as on celestial wings,
Afar from each dull scene of earth,
Each seemed to know a seraph's birth,
So deep that pleasure's thrill!
What though from men their names have perished?
Through changing days their worth I've cherished:
The dead! I love them still!

When sighs the twilight's gale,
In dulcet tones its music waking,
And blends with waves in ripples breaking,
Down the wide-spreading dale;
Or when the thunder's voice is heard
From heaven, in terror speaking,
And storm-winds fierce are shrieking
From mount and forest far,
While temple-spires are crashing,
And ocean's surge is lashing
The tempest's furious car,
And each around with wo is stirred,
In varied tones, a voice I hear,
Or soft or loud, or far or near,
By sea, by fount, by rill,
From out the spirit-land declaring
The lost, the lost, my thoughts are sharing!
The dead! I love them still!

I crave no monument
To tower above where I am resting,
E'en though to noble deeds attesting
The sculptor's art is lent:
No charm where marble columns stand
So pure as that which liveth
Where faithful memory giveth
Sad tears, to friendship paid!
I would my name might perish
When those whose love I cherish,
Shall pass the realms of shade,
And meet me in the spirit-land!
Save hope of heaven, 'tis all I ask,
When finished is life's varied task,
And past each good, each ill,
That those who round my couch are bending
Shall murmur, mid their prayers ascending,
'Till death, we'll love thee still!'

HOROLOGY.

Concluded.

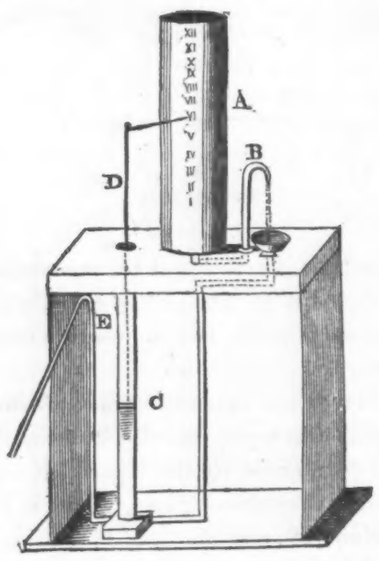
The most simple method for measuring time, next to the *dial* is the *Hour-glass*, which was doubtless used prior to the more complicated clepsydræ.

Hour-glasses are made of various forms for the purposes of ornament, but the interior construction of all is necessarily the same. It represents two cylindrical cones of glass, joined at the apex. At the point of conjunction there is a small aperture, just large enough for a certain sized sand in a given quantity to pass through within the space of an hour. This sand is put into one of the cones, and when it has all run out into the other, completing the measurement of the hour, the glass is reversed, and the sand again commences its descent.

The *Clepsydræ* or *water-clock* was brought into use by the Greeks at an early period, probably

about the time of Pythagoras. They were first constructed by the philosophers for the purpose of determining, by measuring time precisely, some of their problems; such as the time required for a certain body of a given weight to pass through a medium of given distance and density. Their correctness caused them to be used afterward for the measurement of time. Ctesibius of Alexandria, who flourished about two hundred years prior to the Christian era, spent much time in bringing this instrument to perfection, yet he did not advance it to that point of usefulness to which the Greeks afterward carried it.

The utile portion of the clepsydræ is simple, but the ornamental parts were often made in a complicated and expensive style. In the earliest water-clocks, which were in principle of action similar to the hour-glass, the indication of time was effected by marks corresponding to either the diminution of the fluid in the containing vessel, during the time of emptying, or to the increase of the fluid in the receiving vessel during its time of filling; but it was found that the water escaped much more rapidly out of the vessel when it was full, than when it was nearly empty, owing to the difference in the pressure of the atmosphere, and it required great ingenuity in adjusting the marks upon the index, so as to correspond with this variation.



Clepsydræ.

The construction of a clepsydræ for the most correct measurement of time is shown in our engraving. The cylinder A on which twelve hours are marked, is hollow, and serves for a reservoir to contain the water. At the bottom is an aperture through which the water passes into the pipe B; this pipe has a very small orifice from whence the water escapes with a certain rapidity, and falls into the cup below, having an opening at the bottom similar to the reservoir. From this cup the water flows into the receiving cylinder C in which it rises to a given height each hour. A piece of cork with a wire D attached is placed in this cylinder, and floats on the surface of the water. To the wire an index hand is fixed, which, as the cork rises, points out the hours upon the large cylinder. A syphon E is attached, which exhausts the water in the cylinder C as soon as it rises to a certain height, and the indicator falls to figure I, to commence its daily labor again. By increasing the length of the two cylinders, twenty-four hours may be marked and measured, before the clock needs *winding up* by the syphon. When Julius Cæsar invaded Britain he found a kind of clepsydræ in use among the inhabitants of the southern part of the island. They were in common use at that time in Rome, and continued so in Italy, as late as the sixth century of our era.

At what precise time *clocks* or machines for horological purposes, combining wheels and springs, were invented, cannot be determined. Vitruvius mentions incidentally, an Alexandrian artist who combined springs and wheels with the clepsydræ, about 41 B. C. It is mentioned in an old chronicle, that Haroun al Raschid, Caliph of Bagdad, sent a clock as a present to Charlemagne, but from a more minute detail elsewhere given, it seems to have been an ingenious *clepsydræ*, which had the addition of bells, to record by sounds the termination of each hour.

It is related that an artist named Dondi, constructed a clock for the city of Padua, in the fourth century, and that a short time afterward one Zelander made one for the same city, still more complex, which was repaired in the sixteenth century by Janellin Turrianus, the mechanic of Charles V. These, too, were doubtless improved clepsydrii.

We have no positive proof that clocks, similar to those now in use, were made previous to, or about the commencement of, the twelfth century. Near the close of the eleventh century, William, abbot of Heischan in Saxony "invented," according to his biographer, "a horologium similar to the celestial hemisphere;" and from corroborative testimony, it appears clear that this monk was either the inventor of the modern clock, or was the first to introduce it into Europe.

In the thirteenth century, Sultan Saladin gave a clock to the emperor Frederick II., which was put in motion by weights and wheels. It marked

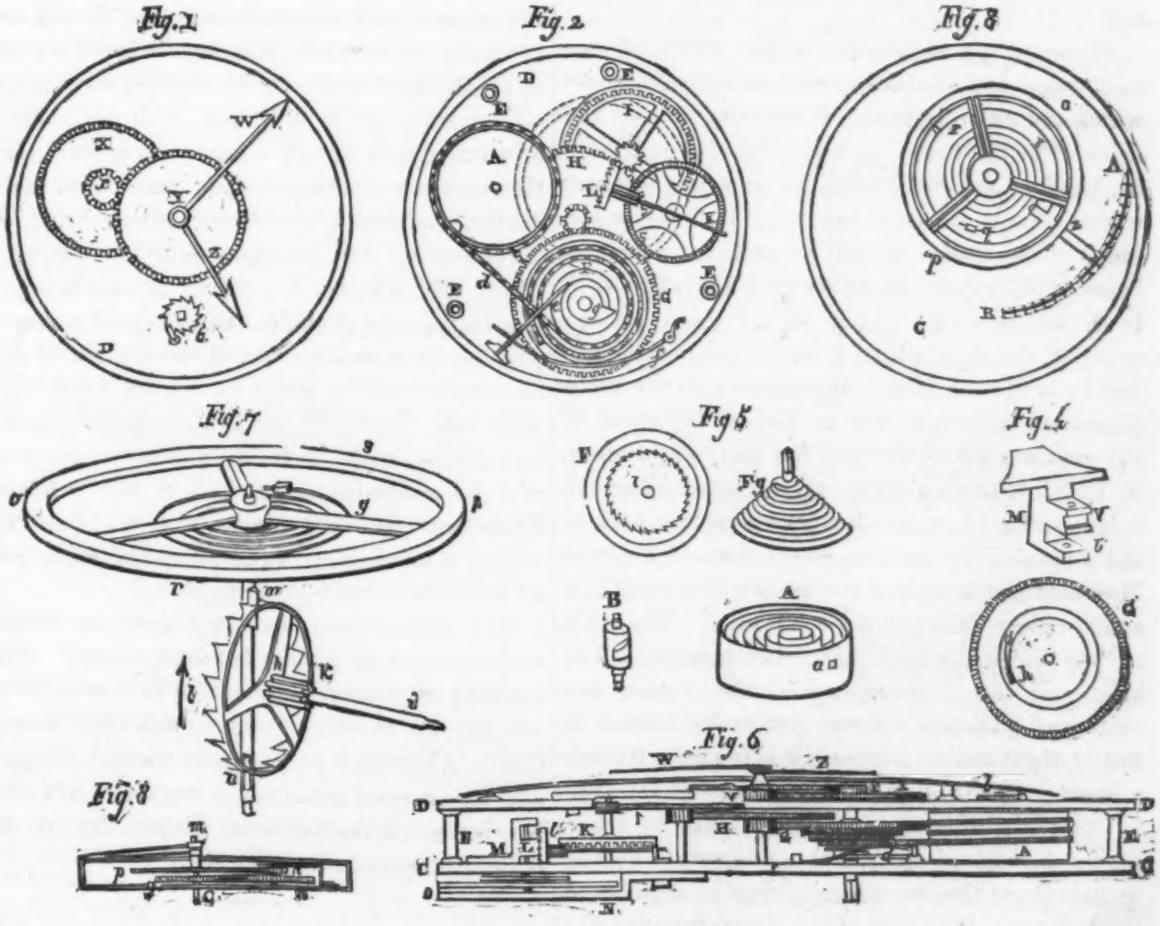
the hour, the course of the sun and moon, and the planets in the zodiac. On this fact, many authors found a reasonable belief, that clocks were invented by the Saracens, and made known to Europeans in the time of the crusades.

During the sixteenth and seventeenth centuries, great improvements were made in the construction of clocks, many of which exhibited a complication of machinery for the exhibition of automatic figures, as well as sidereal and lunar observations, truly wonderful. Of these, the clocks of Strasburg and Lyons were the most remarkable. They are described at length in Nicholson's Operative Mechanic, part second, page 60. The invention of the pendulum, and its great improvements by a combination of metals, advanced the art of clock-making rapidly from the seventeenth to the eighteenth century, and brought it to that perfection and accuracy which it now exhibits.

Watches, or as they may be properly called, portable clocks, came into use in England a short time prior to the reign of Queen Elizabeth. The first watches were not intended to be worn about the person, but were constructed for the convenience of transmission from place to place. A watch in the reign of Elizabeth was about the size of a dessert-plate of the present day. This applies more particularly to one owned by the Queen herself. But Shakspeare, who lived during her reign, alludes in his *Twelfth Night* to a watch evidently worn in the pocket. In the reign of Charles I. their dimensions were considerably reduced; but it was not till the reign of James, near the close of the seventeenth century, that pocket watches came into general use.

Watches were quite common in France and Germany about the middle of the sixteenth century, but they were too unwieldly for pocket service. A German named Huygens and Dr. Hooke, an Englishman, for a long time disputed for the honor of the invention of the watch proper; the majority give the palm to Dr. Hooke.

Our space will not permit us to give a detailed description of the mechanism of modern time-keepers, included under the several names of clock, watch and chronometer. We introduce an engraving representing the machinery of a common watch, and this will serve to illustrate



Mechanism of a common watch.

the principle of all other horological machines of the present day.

Figure 1 represents the dial-plate with the hour and minute wheels and indices. X is the minute wheel, Z the hour wheel, and Y the cannon pinion, or a hollow piece of steel which adheres by friction to the arbor of the centre wheel of the watch, and passes through a socket in the hour wheel. At the lower end are leaves or teeth that turn the minute wheel. To the upper square end the minute hand is attached, while the hour hand is fastened to the socket of the hour wheel.

Figure 2 and figure 6 present two views of the machinery of a watch; the first, of all between the plates, the second, of the whole complete. Figure 2 gives the forms of the wheels, and figure 6 their action. In the former, A is the box containing the mainspring; G is the main wheel with the fusee attached; H is the centre or second wheel; I the third wheel; K the contrate wheel turning horizontally with perpendicular teeth; L the balance-wheel; EEE the pillars which connect the plates; *d* the chain attached to the fusee and mainspring box; *e* a small piece of steel borne down by a delicate spring *f*, to prevent the chain from running off the fusee at the top.

Figure 6 represents the action thus:—A the cylindrical box containing the mainspring round which the chain is wound connecting it with the fusee. To the fusee the main wheel G is attached, having forty-eight teeth on its circumference, which turns a pinion of twelve teeth, fixed on the arbor of the centre wheel H, so called from its being in the centre of the watch; it has fifty-four teeth which turn a pinion of six teeth, on the arbor of the third wheel I, which has forty-eight teeth; it is sunk in a cavity formed in the pillar plate, and turns a pinion of six, on the arbor of the contrate wheel K which has forty-eight teeth, by which it turns a pinion of six, attached to the balance-wheel L, which has fifteen teeth. One of the pivots of the balance-wheel turns in a frame M, called pottance, and the other pivot runs in a smaller piece called counter-pottance. The teeth of the balance-wheel impel the balance. The arbor of the balance, called the verge, has two small pallets or leaves projecting from it at nearly right angles; these are acted upon in such a manner by the teeth of the balance-wheel, that, at every vibration of the balance, aided by a fine spring, a tooth of the wheel is allowed to escape or pass by, at the same time giving an impulse to the balance. This part of the watch is called the *escapement* from this fact, and is clearly shown in figure 7. *O p s r* indicates the balance, *g* the hairspring, *k* the balance-wheel, *h* the pinion in which the contrate wheel acts, and *m n* the two pallets upon the verge. The arrow *i* denotes the direction in which the balance-wheel moves.

A, figure 5, is the box with the mainspring coiled up within it. *a* is a small square hole in which a thick piece of steel, attached to the mainspring is inserted, which holds that end of the spring fast, while by the other end attached to the arbor B, it is coiled up. F shows the bottom of the main wheel with the ratchet *l*, and F *g* the fusee on which the chain is wound, and which is attached to the main wheel. Figure 4 shows the form of the pottance. V is the place for the slide containing the hole for the balance-wheel pivot, and *l* the bottom on which the verge pivot rests. Figure 8 shows the top plate with the balance *o*, the hairspring *v*, the regulator *z*, and the index to the regulator marked R A.

When it was ascertained by navigators that good time-keepers were highly useful in determining correctly the longitude at sea, the attention of the mechanics and even of the government itself of England, was turned to the subject of so improving spring clocks, or watches, as to make them capable of enduring the vicissitudes of heat and cold without variation. In the reign of Queen Anne, the parliament offered a reward of twenty thousand pounds sterling, for a method of determining the longitude with the accuracy of thirty miles, or half a degree of a great circle. Harrison, a watchmaker, after great labor and industry produced a time-keeper which he called a chronometer, that procured him the offered reward. He effected his object in equalizing the contraction and expansion of the spiral spring and balance, by a combination of two metals, of opposite expansions, by which he formed a self-regulating curb. This principle is now applied to pendulum clocks, with the addition of mercury, placed in a jar which forms the ball of the pendulum. These are the only clocks that will keep time during a whole year, exposed to the vicissitudes of the seasons, without change.

The chronometer has now become an indispensable instrument on board of every vessel. When properly regulated and rated, it is astonishing to witness the accuracy with which they measure time. About five years since, we had charge of one for several months, to regulate, and from November till the following May, it did not vary quite five seconds from its rate.

Old age is a beautiful crown; man finds it only in the way of temperance, justice, and wisdom.

SOMNAMBULISM.

With the subject of dreaming, that of Somnambulism is naturally and very intimately connected. And if the term Dreaming, in some important sense, indicates a perplexed and irregular mental action, Somnambulism does not less so. Hence the propriety of giving some account of it in a treatise which proposes to give the outlines, if nothing more, of disordered mental action.

In attempting to give a definition, we are not certain of being perfectly safe. Perhaps we shall come near enough to the fact in the case, in saying, that somnambulists are persons who are capable of walking and of other voluntary actions while asleep. Of such persons many instances are on record; and of some a particular account is given. The following instance which in some respects is a somewhat striking one, will help to illustrate the nature of the subject now before us.

A farmer in one of the counties of Massachusetts, according to the account of the matter which was published at the time, had employed himself, for some weeks in winter, thrashing his grain. One night, as he was about closing his labors, he ascended a ladder to the top of the great beams in the barn, where the rye which he was thrashing was deposited, to ascertain what number of bundles remained unthrashed, which he determined to finish the next day. The ensuing night, about two o'clock, he was heard by one of the family to arise and go out. He repaired to his barn, being sound asleep and unconscious of what he was doing, set open his barn doors, ascended the great beams of the barn where his rye was deposited, threw down a flooring, and commenced thrashing it. When he had completed it, he raked off the straw, and shoved the rye to one side of the floor, and again ascended the ladder with the straw, and deposited it on some rails that lay across the great beams. He then threw down another flooring of rye, which he thrashed and finished as before. Thus he continued his labours until he had thrashed five floorings, and on returning from throwing down the sixth and last, in passing over part of the haymow, he fell off, where the hay had been cut down about six feet, on to the lower part of it, which awoke him. He at first imagined himself in his neighbor's barn; but, after groping about in the dark a long time, ascertained that he was in his own, and at length found the ladder, on which he descended to the floor, closed his barn doors which he found open, and returned to his house. On coming to the light, he found himself in such a profuse perspiration that his clothes were literally wet through. The next morning, on going to his barn, he found that he had thrashed, during the night, five bushels of rye, had raked the straw off in good order, and deposited it on the great beams, and carefully shoved the grain to one side of the floor, without the least consciousness of what he was doing until he fell from the hay.

Before attempting to offer anything in explanation of cases of somnambulism, we wish to delay a moment for the purpose of stating very briefly the manner in which the senses are supposed successively to fall asleep. What sleep is, mentally considered and independently of the body, it might be difficult to say. But we know this, at least, that in a state of sleep the mind, as a general thing, ceases to retain its customary power over the muscular movements of the system; and also that all the senses are at such times locked up, as it were, and no longer perform their usual offices. And furthermore, the effect upon the senses takes place in such a way, that it seems to be proper to speak of them as separately or individually going to sleep and awaking from sleep. The additional fact is, that they appear to fall asleep at different times and in succession.

This last fact is one of considerable importance in its practical applications. But we do not undertake here to enter into particulars and proofs. Reference must be had for the details and the confirmatory reasonings and facts to Cullen, and particularly to Cabanis, a distinguished French writer on subjects of this nature. We give merely the conclusions at which they arrive.

The sight, as we gather from the writers who have been named, ceases, in consequence of the protection of the eyelids, to receive impressions first while all the other senses preserve their sensibility entire; and may, therefore, be said to be first in falling asleep. The sense of taste, according to the above writers, is the next which loses its susceptibility of impressions, and then the sense of smelling. The hearing is the next in order, and last of all comes the sense of touch. Furthermore, the senses are thought to sleep with different degrees of profoundness. The senses of taste and smelling awake the last; the sight with more difficulty than the hearing, and the touch the easiest of all. Sometimes a very considerable noise does not awake a person; but, if the soles of his feet are tickled in the slightest degree, he starts up immediately.

Similar remarks are made by the writers already referred to on the muscles. Those which move the arms and legs cease to act, when sleep is approaching, sooner than those which sustain the head; and the latter before those which support the back. And here it is proper to notice an exception to the general statement made in the preceding section, that the mind in sleep ceases to retain its power over the muscles. Some persons can sleep standing, or walking, or riding on horseback; with such we cannot well avoid the supposition, that the voluntary power over the muscles is in some way retained and exercised in sleep. These statements are particularly important in connexion with the facts of somnambulism; only admit that the susceptibility of the senses, and the power of the muscles may remain, even in part, while we are asleep, and we can account for them. We know that this is not the case in a vast majority of instances; but that it does sometimes happen is a point which seems at last to be sufficiently well established.

Keeping in mind the views that have been given in the preceding sections, we proceed to remark, as has already been intimated, that a number of things may be satisfactorily said in explanation of somnambulism. The somnambulist, in the first place, is in all cases dreaming, and we may suppose, in general, that the dream is one which greatly interests him. After he has awaked, the

action he has passed through appears, in his recollection of it, to be merely a dream, and not a reality. "A young nobleman (says Dr. Abercrombie), "living in the citadel of Breslau, was observed by his brother, who occupied the same room, to rise in his sleep, wrap himself in a cloak, and escape by a window to the roof of the building. He there tore in pieces a magpie's nest, wrapped the young birds in his cloak, returned to his apartment, and went to bed. In the morning he mentioned the circumstance as having occurred in a dream, and could not be persuaded that there had been anything more than a dream, till he was shown the magpies in his cloak." And this is noticed to be commonly the fact. What has been done has the appearance of being a dream. And there is no doubt that the mind of the somnambulist is in that particular state which we denominate dreaming.

II.—In the second place, those volitions, which are a part of his dreams, retain their power over the muscles, which is not the fact in the sleep and the dreaming of the great body of people. Consequently, whatever the somnambulist dreams, is not only real in the mind, as in the case of all other dreams, but his ability to exercise his muscles enables him to give it a reality in action. Whether he dream of writing a letter, of visiting a neighbor's house, of cutting and piling wood, of thrashing his grain, or ploughing his fields (acts which have at various times been ascribed to the somnambulist), his muscles are faithful to his vivid mental conceptions, which we may suppose in all cases closely connected with his customary labors and experiences, and frequently enable him to complete what he has undertaken, even when his senses are at the same time closed up.

But the inquiry arises here, how it happens, while in most cases both senses and muscles lose their power, in these, on the contrary, the muscles are active, while the senses alone are asleep? In reference to this inquiry, it must be acknowledged, that it is involved at present in some uncertainty, although there is much reason to anticipate that it may hereafter receive light from further investigations and knowledge of the nervous system and functions. There is a set of nerves, which are understood to be particularly connected with respiration, and which appear to have nothing to do with sensation and with muscular action. There is another set, which are known to possess a direct and important connexion with sensation and the muscles. These last are separable into distinct filaments, having separate functions; some being connected with sensation merely, and others with volition and muscular action. In sensation, the impression made by some external body exists at first in the external part of the organ of sense, and is propagated along one class of filaments to the brain. In volition and voluntary muscular movement, the origin of action, as far as the body is concerned, seems to be the reverse, commencing in the brain, and being propagated along other and appropriate nervous filaments to the different parts of the system.

Hence it sometimes happens, that, in diseases of the nervous system, the power of sensation is, in a great measure, lost, while that of motion fully remains; or, on the contrary, the power of motion is lost, while that of sensation remains. These views help to throw light on the subject of somnambulism. Causes, at present unknown to us, may operate, through their appropriate nervous filaments, to keep the muscles awake, without disturbing the repose and inactivity of the senses. A man may be asleep as to all the powers of external perception, and yet be awake in respect to the capabilities of muscular motion. And, aided by the trains of association, which make a part of his dreams, may be able to walk about and to do many things without the aid of the sight and hearing.

III.—Further, we are not to forget here some remarks in the preceding chapter to this effect, viz., that the sleep of the senses is sometimes an imperfect or partial one; and that at such times the senses are susceptible of slight external influences. Both in somnambulism and in ordinary cases of dreaming, the senses are not always entirely locked up; many observations clearly show, that it is possible for the mind to be accessible through them, and that a new direction may be given in this way to a person's dreams without awaking him. Hence somnambulists may sometimes have very slight visual perceptions; they may, in some slight measure, be guided by sensations of touch; all the senses may be affected in a small degree by their appropriate objects, or this may be the case with some and not with others, without effectually disturbing their sleep. These facts will be found to help in explaining any peculiar circumstances, which may be thought not to come within the reach of the general explanation which has been given.

IV.—But this is not all. There are some cases which are not reached by the statements hitherto made. There are not only slight exceptions to the general fact, that somnambulists, like persons in ordinary sleep, are insensible to external impressions, but occasionally some of a marked and extraordinary character. There are a few cases (the recent instance of Jane Rider in this country is one) where persons, in the condition of somnambulism, have not only possessed slight visual power, but perceptions of sight increased much above the common degree. In the extraordinary narrative of Jane Rider, the author informs us, that he took two large wads of cotton, and placed them directly on the closed eyelids, and then bound them on with a black silk handkerchief. "The cotton filled the cavity under the eyebrows, and reached down to the middle of the cheek; and various experiments were tried to ascertain whether she could see. In one of them a watch enclosed in a case was handed to her, and she was requested to tell what o'clock it was by it; upon which, after examining both sides of the watch, she opened the case, and then answered the question. She also read, without hesitation, the name of a gentleman, written in characters so fine that no one else could distinguish it at the usual distance from the eye. In another paroxysm, the lights were removed from her room, and the windows so secured that no object was discerni-

ble, and two books were presented to her, when she immediately told the titles of both, though one of them was a book which she had never before seen. In other experiments, while the room was so darkened that it was impossible, with the ordinary powers of vision, to distinguish the colors of the carpet, and her eyes were also bandaged, she pointed out the different colors in the hearth-rug, took up and read several cards laying on the table, threaded a needle, and performed several other things, which could not have been done without the aid of vision." Of extraordinary cases of this kind, it would seem that no satisfactory explanation (at least no explanation which is unattended with difficulties) has as yet been given. Upham.

It should not be forgotten, that convenience and the economy of time, are often the result of attention to the arrangement of things apparently of little importance.

AMERICAN ANTIQUITIES.

Of the early history of the Peruvians we have but little knowledge, owing to that barbarian policy exercised by the followers of Cortez and Pizarro, in destroying everything belonging to the tribes which they conquered. Like the Mexicans, the Peruvians had advanced in art, science and learning, under the administration of successive wise rulers, and their state archives contained written histories of their country, from the dawn of civilization among them, till the period of the conquest. But the superstitious Spaniards committed these works to the flames, because of their heathen origin, and we are obliged to depend almost exclusively upon the truth of tradition, for the knowledge we possess of the history of this people during the Inca dynasty.

Like other aborigines of this continent, the

Interior of the Temple of the Sun at Cuzco, in Peru.

Peruvians were nomadic tribes and gained a subsistence by hunting and fishing. Superstitious in the extreme, their objects of worship were as numerous as those of the Egyptians. They adored mountains because they sent forth refreshing streams; the rivers because they fertilized the soil; the trees that bore fruit, the animals they slew for food, and the ocean as the great mother of fishes.

Fear seemed to be the great prompter to worship, and their sacrifices were propitiatory, rather than offerings of gratitude and love. They erected altars to tigers and serpents, sacrificed to the directors of storms, whirlwinds and volcanoes, and frequently offered up their children to avert the wrath of some imaginary malignant deity. They believed, however, in a great head, a universal ruler, to whose will all other gods were subordinate; and to the benevolence of this great being, they ascribed the elevation of their country and its inhabitants from a wilderness and ferocious barbarism, to a well cultivated and quite civilized region.

According to the chronicles of the ancient priests, and the traditions of the present natives of Peru, Divine Omnipotence compassionately sent to them the wise and virtuous Manco Capac and the beautiful Oello, his sister and his wife, for the purpose of spreading the seeds of civilization among them, that they might reap a rich harvest of happiness. This event occurred about four hundred years prior to the Spanish invasion. From whence they came, none knew, but it was generally supposed that they came down from heaven, commissioned to increase the happiness of the human race. However fabulous their traditions may appear concerning this pair and their acts, there can be no doubt of the fact, that Manco Capac, one of the first of the Inca dynasty, was a man of extraordinary abilities and did much toward raising the people from a state of great degradation, to comparative civilization and happiness. He performed the double duties of lawgiver and priest, instructing them in those principles of jurisprudence, founded upon social sympathies, which tend to moral and intellectual elevation; and he taught them a religion far more rational and humane than they were before influenced by.

Manco Capac taught the wandering Peruvians to till the ground and irrigate it by changing the course of streams, while Oello instructed the women to educate their children in the ways and precepts of virtue, and to obey their husbands. He fixed the division of lands and enjoined every man to devote some portion of his time to the assistance of his neighbor, thus promoting brotherly love. He instructed the people to show their gratitude by worshipping the sun, the great vivifyer of creation, and thus based a system of religion upon one of the best of human virtues. In a little time, wandering tribes became assimilated, and they built themselves houses and overturned their altars red with the blood of human victims. In a word, this great reformer who doubtless came from the Toltecs or Aztecs, then quite a civilized people inhabiting Central America, poured a flood of light into the dark valleys of Peru that unfolded the beauties of civilization and made the "desert blossom as the rose."

But in the judicial and religious systems of this reformer, there were serious defects. He compelled his subjects to submit in all things to the will of the Incas, or kings, and materially retarded the progress of genius, by making it unlawful for a son to follow any profession different from his father's. The latitude given to the Incas had a mischievous effect, and his successors became despotic in the extreme. Their subjects were permitted to approach them only with rich offerings in their hands, and the people of a whole province have been destroyed, to gratify the cruel caprice of one of these rulers. So divine and reverend was the Inca considered by the people, that when he died, many human victims were sacrificed at his tomb.

Their civil and religious laws were rigidly administered, and many of them were of the most sanguinary nature. For instance, if a priestess of the sun, (which office was filled by virgins,) broke her oath of chastity and was discovered, she was buried alive, her paramour suffered the most cruel torments, and the father, mother, brothers and sisters of both, were considered accomplices and were all thrown upon a funeral pile together and consumed. A boundary was drawn round the birthplace of the two lovers, and it was for ever afterward left a wilderness.

Many remains of ancient civilization may still be seen in Peru, especially in the vicinage of Cuzco, the capital of the Incas. There are remains of a road extending from Cuzco to Quito, a distance of fifteen hundred miles, and in the lower part of the country was another one of nearly equal magnitude. Many fine roads extended from the centre to the confines of the empire, when Pizarro entered that country. Along these roads, granaries were built at certain distances, and the Incas built houses of charity that were constantly open to the weary traveller. Temples, fortresses and canals were to be seen in all directions, and the amount of gold used in the erection of fanes and monuments, was immense. In the imperial gardens of Cuzco, trees and shrubs of gold and silver were formed, and every article in the interior of the palace, was made of the precious metals. It was these immense treasures that excited the cupidity of the Spaniards and caused the overthrow of the great empire of the Incas.

The most magnificent of all the Peruvian temples, was that of the sun at Cuzco, the interior of which is represented by the engraving at the head of this article. The mode of worship in this temple was similar to that of Heliopolis in Egypt, where this great luminary was adored. His golden image occupied a large portion of one side of the interior of the temple, and before this the worshippers prostrated themselves with rich offerings in their hands, which were received by the attendant priests. Several virgins, selected from the first families in the kingdom, were in constant attendance, whose duty it was to make oblations of wine to the burning deity and chant hymns of praise to the great Father of Light.

A Dominican monastery now occupies the site of the temple of the sun, and it is said that its walls are those of that ancient edifice. It is also related that the altar stands upon the very spot where the golden image of the orb was adored. Pinkerton remarks that "a nunnery now stands on the situation, where lived the virgins of the sun."

AMERICAN SCENERY.

The following graphic description of Trenton Falls is from the pen of Captain Marryatt :—

"A tremendous thunder-storm, with torrents of rain, prevented my leaving Utica for Trenton Falls until late in the afternoon. The roads, ploughed up by the rain, were any thing but democratic ; there was no level in them ; and we were jolted and shaken like peas in a rattle, until we were silent from absolute suffering. I rose the next morning at four o'clock. There was a heavy fog in the air, and you could not distinguish more than one hundred yards before you. I followed the path pointed out to me the night before, through a forest of majestic trees and descending a long flight of steps found myself below the Falls. The scene impressed you with awe—the waters roared through deep chasms, between two walls of rock, one hundred and fifty feet high, perpendicular on each side, and the width between the two varying from forty to fifty feet. The high rocks were of black carbonate of lime in perfectly horizontal strata, so equally divided that they appeared like solid masonry. For fifty or sixty feet above the rushing waters they were smooth and bare ; above that line vegetation commenced with small bushes, until you arrive at their summits, which were crowned with splendid forest trees, some of them inclining over the chasm, as if they would peep into the abyss below and witness the wild tumult of the waters.

"From the narrowness of the pass, the height of the rocks, and the superadded towering of the trees above, but a small portion of the heavens was to be seen, and this was not blue but of a misty, murky gray. The first sensation was that of dizziness and confusion, from the unusual absence of the sky above, and the dashing frantic speed of the angry boiling waters. The rocks on each side have been blasted so as to form a path by which you may walk up to the first fall ; but this path was at times very narrow, and you have to cling to the chain which is let into the rock. The heavy storm of the day before had swelled the torrent so that it rose nearly a foot above this path ; and before I had proceeded far, I found that the flood swept between my legs with a force which would have taken some people off their feet. The rapids below the Falls are much grander than the Falls themselves ; there was one down in a chasm between two riven rocks, which it was painful to look upon and watch with what a deep plunge—what irresistible force—the waters dashed down and then returned to their own surface, as if struggling and out of breath. As I stood over them in their wild career, listening to their roaring as if in anger, and watching the madness of their speed, I felt a sensation of awe—an inward acknowledgment of the tremendous power of Nature ; and after a time, I departed with feelings of gladness to escape from thought which became painful when so near to danger.

"I gained the lower falls, which now covered the whole width of the rock, which they seldom do except during the freshets. They were extraordinary from their variety. On the side where I stood, poured down a rapid column of water about one half the width of the fall ; on the other it was running over in a clear, thin stream, as gentle and amiable as water could be. That part of the fall reminded me of ladies' hair in flowing ringlets, and the one nearest me of the Lord Chancellor Eldon, in all the pomposity and frowning dignity of his full-buttoned wig. And then I thought of the lion and the lamb, not lying down but falling down together ; and then I thought I was wet through, which was a fact ; so I climbed up a ladder, and came to a wooden bridge above the fall, which conveyed me to the other side. The bridge passes over a staircase of little falls, sometimes diagonally, sometimes at right angles, with the sites, and is very picturesque.

"On the other side you climb up a ladder of one hundred feet, and arrive at a little building with a portico, where travellers are refreshed. Here you have a view of all the upper falls, but these seem tame after witnessing the savage impetuosity of the rapids below. You ascend another ladder of one hundred feet and you arrive at the path pointed out to you by the broad chip of the woodman's axe. Follow the chips and you will arrive four or five feet above both the bridge and the level of the upper fall. This scene is splendid. The black perpendicular rocks on the other side ; the succession of falls ; the rapids roaring below ; the forest trees rising to the clouds and spreading with their majestic boughs ; the vapor ascending from the falling waters ; together with the occasional glimpses of the skies here and there—all this induces you to wander with your eyes from one point of view to another, never tiring with its beauty, wildness and vastness ; and if you do not exclaim with the Mussulman, God is great! you

feel it through every sense, at every pulsation of the heart.

"The mountain was still above me, and I continued my ascent; but the chips now disappeared, and like Tom Thumb, I lost my way. I attempted to retreat but in vain: I was no longer among forest trees, but in a maze of young mountain ash, from which I could not extricate myself, so I stood still to think what I should do. I recollected that the usual course of proceeding on such occasions, was either to sit down and cry, or attempt to get out of your scrape. Tom Thumb did both; but I had no time to indulge in the former luxury, so I pushed and pushed, till I pushed myself out of the scrape, and I found myself in a more respectable part of the woods. I then stopped to take breath. I heard a rustling behind me, and made sure it was a panther—it was a beautiful little palm squirrel, who came close to me, as if to say, "Who are you?" I took off my hat and told him my name, when very contemptuously, as I thought, he turned short round, cocked his tail over his back and skipped away. "Free, but not enlightened," thought I; "has'nt a soul above nuts." I also beat a retreat, and on my arrival at the hotel, found that, although I had no guide to pay, Nature had made a very considerable levy upon my wardrobe; my boots were bursting, my trowsers torn to fragments, and my hat was spoiled; and moreover, I sat shivering in the garments which remained. So I, in my turn, levied on a cow that was milking, and having improved her juice very much by the addition of some rum, I sat down under the portico, and smoked the cigar of meditation.

"The walls of the portico were, as usual, scribbled over by those who would obtain cheap celebrity. I always read these productions; they are pages of human life. The majority of the scribblers leave a name and nothing more; beyond that, some few of their productions are witty, some sententious, mostly gross."

THE CLOUD.—PERCY B. SHELLEY.

I BRING fresh showers for the thirsting flowers,
From the seas, and from the streams;
I bear light shade for the leaves when laid,
In their noonday dreams.
From my wings are shaken the dews that waken
The sweet buds every one,
When rocked to rest on their mother's breast,t
As she dances about in the sun.
I wield the flail of the lashing hail,
And whiten the green plains under,
And then again I dissolve in rain,
And laugh as I pass in thunder.

I sift the snow on the hills below,
And the pine trees groan aghast;
And all the night 'tis my pillow white,
As I sleep in the arms of the blast.
Sublime on the towers of my skyey bowers,
Lightning, my pilot, sits;
In a cavern under, is fettered the thunder
Which struggles and howls at fits.
Over the rills, the crags and the hills,
Over the lakes and plains;
I all the while bask in heaven's blue smile,
While earth is dissolving in rains.

The sanguine sunrise with his meteor eyes,
And his burning plumes outspread,
Leaps on the back of my sailing rack,
While the morning star shines dead.
As on the jag of a mountain crag,
Which an earthquake rocks and swings,
An eagle alit, and a moment may sit
In the light of its golden wings.
When the crimson pall of eve may fall
From the depth of heaven above,
With wings folded I rest, on mine airy nest,
As still as a brooding dove.

That orbed maiden, with white fire laden.
Whom mortals call the moon,
Glides, glimmering o'er my fleece-like floor,
By the midnight breezes strewn;
And wherever the beat of her unseen feet,
Which only the angels hear,
May have broken the woof of my tent's thin roof,
The stars peep behind her and peer;
And I laugh to see them whirl and flee
Like a swarm of golden bees;
When I widen the rent in my wind-built tent,
Till the calm rivers, lakes and seas,
Like strips of the sky fallen through me on high,
Are each paved with the moon and these.

I blind the sun's throne with a burning zone,
And the moon's with a girdle of pearl,
The volcanoes are dim, and the stars reel and swim,s
When the whirlwinds my banner unfurl,
From cape to cape with a bridge-like shape,
Over a torrent sea,
Sunbeam proof, I hang like a roof,
The mountains its columns be.
The triumphant arch through which I march
With hurricane, fire and snow,
When the powers of air are chained to my chair,
Is the million-coloured bow.
The sphere fire above its pure colors wove,
While the moist earth was laughing below.

I am the daughter of earth and water,
And the nursling of the sky;
I pass through the pores of the ocean and shores,
I change, but I never die!
For after the rain, when with never a stain
The pavilion of heaven is bare,
And the winds and sunbeams with their convex gleams
Build up the blue dome of air,
I silently-laugh at my own cenotaph
And out of the caverns of rain,
Like a child from a room, like a ghost from a tomb,
I arise, and unbuild it again.

New iron should be very gradually heated at first, after it has become inured to the heat, it is not as likely to crack.

Portrait of Bacon.

LORD BACON.

FRANCIS BACON was born the twenty-second day of January 1561, and was the son of Sir Nicholas Bacon, for more than twenty years keeper of the great seal. He was educated at Trinity College, Cambridge, after leaving which he entered himself a student of Gray's Inn, with the object of following his father's profession of the law. In this profession, and in public life, he rapidly rose to the highest eminence; and in 1619 he was made Lord High Chancellor of England, and created Baron Verulam, to which title was added, the following year, that of Viscount St. Albans. Bacon's political course, up to this time, had not been very remarkable for disinterestedness or independence; and it was destined to terminate suddenly in disgrace and sorrow. In March, 1621, he was impeached by the House of Commons for corruption in his high office; and his own confession soon after admitted the truth of the accusation in nearly all its force; on which he was immediately deprived of the seals, and sentenced to be fined, imprisoned during the king's pleasure, and for ever excluded from parliament and all public employments. He afterward obtained a remission of the hardest parts of his sentence: but he only survived till the ninth of April, 1626, on which day he died suddenly at the Earl of Arundel's house of Highgate. Intellectually considered, he was so great a man, that his character and conduct, as an historical personage, are commonly, as it were by general consent, in a very singular degree overlooked and forgotten when we mention the name of Bacon. It is worthy of notice, as a curious evidence of how little the delinquencies and misfortunes of the politician, memorable as they were, were some time after his death known or noted in those parts of the world which were most filled with the fame of the philosopher, that Bayle, in his Dictionary, published in 1695, and again in 1702, has given us an article on Bacon, in which he does not so much as allude to his lamentable fall, being evidently ignorant that such an event had ever taken place.

It is a most remarkable fact, and one vividly illustrative of the weakness and inefficiency of a philosophy so constituted, that for the long space of nearly two thousand years it not only remained unproductive, but actually went back and decayed every day more and more. From the age of Democritus, Hippocrates, and Aristotle, four hundred years before the birth of Christ, down to nearly the middle of the sixteenth century of our era, men, instead of making any progress in the method of prosecuting the study of nature, had been gradually sinking into deeper and deeper ignorance and blindness in regard to every thing appertaining to that branch of science. Accidental discoveries may have occasionally turned up to add a few items to their stock of facts, though not, there is reason to believe, to an extent sufficient to make up for those which were continually dropping away into forgetfulness; but of

philosophy itself, properly so called, there was nearly all the while a decline like that of the daylight after the sun has sunk below the horizon. Certain general principles, sanctioned by the authority of great names, or the tradition of the schools, were considered as forming the necessary foundation of all truth. No attempt was made, or so much as thought of, to test these sacred affirmations by the actual investigation of nature; the aim was always to reconcile the fact to the doctrine, not the doctrine to the fact. At last the explication, and we might almost say the worship of these principles became nearly the sole occupation of the professors of philosophy; even the collecting of new facts by means of observation was entirely given up. This was the state of things during what are called the middle or the dark ages, which may be described as comprehending the thousand years from the taking of Rome by the Goths in the middle of the fifth century, to the taking of Constantinople by the Turks in the middle of the fifteenth.

After this last-mentioned event, and the revival of letters in the west, which was brought about mainly by the learned exiles whom the destruction of the Grecian empire forced to take refuge in Italy, the human intellect did indeed manifest a disposition, in almost all departments of science, to throw off the yoke of prejudice and authority to which it had so long resigned itself. In natural philosophy, as well as in other studies, various intrepid and original thinkers arose, determined to make their way to the knowledge of truth by their own efforts, and to look into the realities of nature with their own eyes. These men well deserve to be accounted the pioneers of Bacon. But it was not till he arose, that the war against the old despotic formalities of the schools was commenced on any thing like a grand scale, or carried on with adequate vigor and system. It was he who actually effected the conquest—who dispersed the darkness and brought in the light. This he did by the publication of his 'Novum Organon Scientiarum,' or New Instrument of the Sciences.

The method of philosophy recommended and taught in the 'Novum Organon,' is that of experiment and induction. Experimenting was a favorite employment of philosophers even in the dark ages. The chymists or alchymists, for instance, of those days, were continually making experiments. But their experiments were all made simply for the purpose of obtaining a particular material result; never with the object of detecting or testing a principle. Thus, they mixed or fused two or more substances together, in the hope that the combination might yield them the *elixir vitæ*, or the universal tincture; but they never resorted to a course of experiments to ascertain whether nature, as was asserted in the schools, really abhorred a vacuum, or to try the alleged incompressibility of water, or to bring to the proof any of the other commonly received dogmas of a similar description. It may be safely affirmed, that they never dreamed of experimental philosophy in this sense. Now this was the method of experiment to which Bacon called the attention of philosophical inquirers, and of which he first fully laid open the character, the uses, and the rules. By induction, again, he meant merely the bringing in or collecting of facts, and the assorting of them according to their bearings, for the purpose of thence deducing those inferences which properly constitute philosophy. Although the Baconian philosophy has been called the philosophy of induction, the phrase is to be taken as referring merely to the foundation on which it rests. Induction is not its object, but only one of its instruments; not its end, but its beginning. Its great author sufficiently expressed his sense of the true place which mere induction held in philosophy, when he used, as we are informed by his chaplain, Dr. Rawley, in his Preface to Bacon's 'Sylva Sylvarum,' to complain, in allusion to his task of collecting the facts in that work, that he, who deserved "to be an architect in this building, should be forced to be a workman and a laborer, and to dig the clay and burn the brick." But on the other hand, he held it to be essential that this work should be performed by some one. He maintained that no philosophical truth or general principle could be obtained by any other method than by the induction of facts, or was entitled to acceptance, except in so far as it was supported by that testimony. The fundamental tenet, in short, of his philosophy is announced in the opening sentence of the 'Novum Organon:'—"Man, the servant and interpreter of Nature, understands and reduces to practice just so much as he has actually experienced of Nature's laws; more he can neither know nor achieve." Penny Mag.

MEANINGS OF PROPER NAMES.

All-bright is the interpretation of the Saxon name *Albert*, and *all-peace* that of *Alfred*. Besides its pleasing character as far as sound is concerned, the last of these names ought to be held in peculiar reverence in a land that traces to an Alfred the institution of trial by jury. *Alphonso* is the Latinized or rather Spanish form of the Gothic *Elfuns*, *our help*. *Arthur* is from the ancient British, and signfies *mighty*. The semi-fabulous hero of the Round Table first made the name famous, and it has been aptly borne by the greatest of modern captains, Arthur Duke of Wellington. *Charles*, from the German, signifies *valiant, strong*-spirited. It is an excellent standard name, one of the best of the familiar ones. One of the greatest men who ever bore it was Charles the Great, whose name and title the French fused into Charlemagne, with their usual passion for changes of this kind. *Edgar* (happy honor), *Edmund* (happy peace,) and *Edward* (happy ward or keeper,) are all Saxon names, of an agreeable, manly order. *Edwin*, though sentimentalized to the verge of namby-pambyism by Beattie, is a good Saxon name, with a good meaning, happy winner. *Francis*, one of our most unobjectionable common names, signifies frank and free. *Frederick* has the sense of rich peace. *Gilbert*, in the Saxon has the meaning of bright pledge;

and what meaning could be more delightful to a parent than this? The name is hallowed by the sweet little story told of the mother of Thomas-à Becket. His father, when a young man, served in the Crusades, and, being taken prisoner, saw and loved the daughter of the Emir who was his captor. After a time, Becket escaped and came home. The Emir's daughter followed him to England, and went from place to place, and street to street, calling out Gilbert!—being the only word of English she knew. This was her talisman, the anchor of her hope; and she was finally seen by Gilbert Becket, who took the faithful alien to his home and his bridal bed. She became the mother, as has been said, of the famous churchman. *Godfrey* signifies God's peace, and *Godwin*, victorious in God, both good names. *Henry* is derived from German words signifying rich lord. *Hugh* is a German word with the rather extraordinary meaning of hough, to lame or hamstring. Some mighty warrior, famous for houghing his enemies, probably bore the appellation first. It is not unworthy of remark, that there is a particular form of the name Hugh among the Scotch family of the Dalrymples. It is borne by many of them as Hew, in consequence, it is said, of a certain adventure of an ancient warrior of their clan, who bore this Christian name. When he was defending a rocky pass, on which the life of a king depended, he was encouraged in his Herculean labor by the voice of royalty calling to him, "Hew! hew!" a word which he afterward thought proper to adopt as his name, instead of the ordinary appellation. The arms of the family bear reference to this legend. *Humphrey* signifies, in German, home peace. Some years ago, a person on the continent, a Frenchman in all likelihood, sent a letter to Britain, with the following address: "To Schomphredevi, London." Some time elapsed ere the postoffice people could hit on the meaning of this, but finally one ingenious person suggested "Sir Humphrey Davy" as the explanation of the strange word; and so, on inquiry, it proved to be. Undoubtedly, "Srhomphre,' was one of the most illustrious men who ever held the name. *Lewis*, otherwise Louis, and in the feminine Louisa, is from the German, and denotes refuge of the people, in its original form of Ludowick. *Morgan*, a good name, is from the ancient British, and denotes a mariner. *Richard* has the noble sense of rich heart, and *Robert* the equally fine one of bright counsel. These are a pair of the best familiars, and are hallowed by many grand recollections.

The lion-hearted monarch of old England, the not less lion-hearted Bruce of old Scotland, with Robin Hood and Robin Burns, are but a few of those who have consecrated these names, the first of which is from the Saxon and the other from the German. A pithy, sturdy name is our next—*Roger*, signifying strong counsel. Friar Bacon, the inventor of gunpowder, an extraordinary man for his age, was a Roger. *Walter* and *William*, two German names, signifying respectively a woodman and a defender of many, are standard denominations among baptized men, and deservedly so. Raleigh was a man who did no disgrace to Walter, and William we must hold to be the most fortunate of all names, for he who wrote and lived

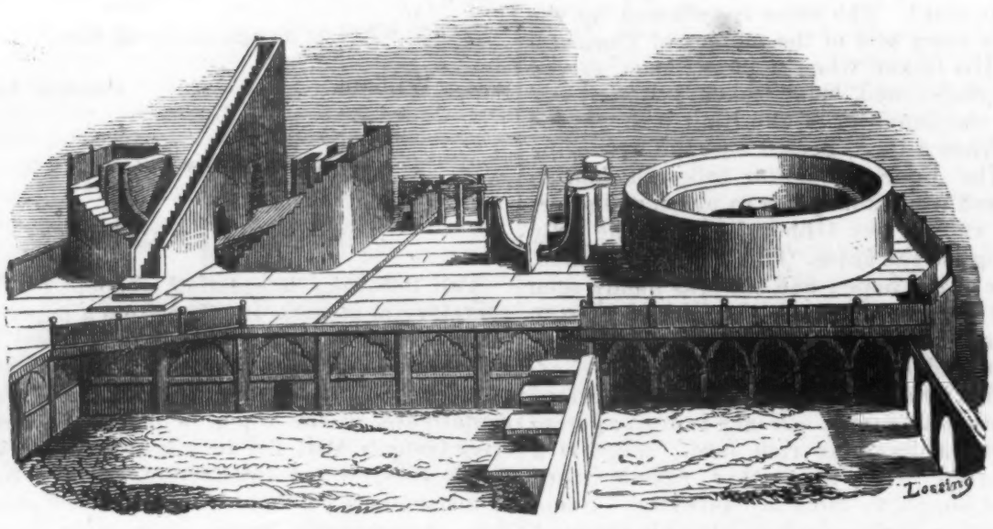
"Not for an age, but for all time,"

was a William. Chambers' Journal.

OBSERVATORY AT BENARES.

The following interesting account of the observatory at *Benares* is taken from a paper in the sixty-seventh volume of the Philosophical Transactions by Sir Robert Barker. "We entered this building," says Sir Robert Barker, "and went up a staircase to the top of a part of it, near the river Ganges, that led to a large terrace, where, to my surprise and satisfaction, I saw a number of instruments yet remaining in the best preservation, stupendously large, immovable from the spot, and built of stone, some of them being upwards of twenty feet in height; and, though they are said to have been erected two hundred years before, the gradations and divisions on the several arcs appeared as well cut, and as accurately divided, as if they had been the performance of a modern artist. The execution in the construction of these instruments exhibited a mathematical exactness in the fixing, bearing, and fitting of the several parts; in the necessary and sufficient supports to the very large stones that compose them, and in joining and fastening them into each other by means of lead and iron cramps. The situation of the two large quadrants, whose radius is nine feet two inches, by being at right angles with a gnomon at twenty-five degrees elevation, are thrown into such an oblique situation as to render them the most difficult, not only to construct of such a magnitude, but to secure in the position for so long a period, and affords a striking instance of the ability of the architect in their construction; for, by the shadow of the gnomon thrown on the quadrants, they do not appear to have altered in the least from their original position; and so true is the line of the gnomon that by applying the eye to a small iron ring, of an inch diameter, at one end, the sight is carried through three others of the same dimensions to the extremity at the other end, distant thirty-eight feet eight inches, without obstruction; such is the firmness and art with which this instrument has been executed. This performance is the more extraordinary when compared with the works of the artificers of Hindostan of this day who are not under the immediate direction of a European mechanic; but arts appear to have declined equally with science in the east.

"Lieutenant Colonel Archibald Campbell, at that time (1777) chief engineer in the East India Company's service at Bengal, a gentleman whose abilities do honor to his profession, made a perspective drawing of the whole apparatus that could be brought within his eye at one view; but I lament he could not represent some very large quadrants, whose radii were about twenty feet, being on the side whence he took his drawing. Their description, however, is that they are exact



Observatory at Benares, in Bengal.

quarters of circles of different radii, the largest of which I judged to be twenty feet, constructed very exactly on the sides of stone walls built perpendicularly, and situated, I suppose, in the meridian of the place: a brass pin is fixed at the centre or angle of the quadrant, from which the brahmin informed me they stretched a wire to the circumference when an observation was to be made; from which it occurred to me that the observer must have moved his eye up or down the circumference by means of a ladder or some such contrivance to raise or lower himself, till he had discovered the altitude of any of the heavenly bodies in their passage over the meridian, so expressed on the arcs of these quadrants; these arcs were very exactly divided into nine large sections; each of these again into ten, making ninety divisions or degrees; and those also into twenty, expressing three minutes each, of about two-tenths of an inch asunder; so that it is probable they had some method of dividing even these into more minute divisions at the time of observation.

"My time would only permit me to take down the particular dimensions of the most capital instrument, or the greater equinoctial sun-dial, which appears to be an instrument to express solar time by the shadow of a gnomon on two quadrants, one situated to the east and the other to the west of it; and indeed the chief part of their instruments at this place appear to be constructed for the same purpose, except the quadrants, and a brass instrument described hereafter. There is a another instrument for the purpose of determining the exact hour of the day by the shadow of a gnomon, which stands perpendicular to, and in the centre of, a flat circular stone, supported in an oblique situation by means of four upright stones and a cross-piece; so that the shadow of the gnomon, which is a perpendicular iron rod, is thrown on the divisions of the circle described on the face of the flat circular stone. There is also a brass circle, about two feet diameter, moving vertically on two pivots between two stone pillars, having an index or hand turning round horizontally on the centre of this circle. This instrument appears to be made for taking the angle of a star at setting or rising, or for taking the azimuth or amplitude of the sun at rising or setting. The use of another instrument I was at a loss to guess. It consists of two circular walls, the outer of which is about forty feet in diameter and eight feet high; the wall within is about half that height, and appears intended for a place to stand in to observe the divisions on the upper circle of the outer wall, rather than for any other purpose; it is divided into three hundred and sixty degrees, each degree being subdivided into twenty small divisions, the same as the quadrants. There is a door-way to pass into the inner circle, and a pillar in the centre of the same height with the lower circle, having a hole in it, in the centre of both circles, which seems to be a socket for an iron rod to be placed perpendicularly in it. The divisions on these, as well as all the other instruments, will bear a nice examination with a pair of compasses. There is also a smaller equinoctial sun-dial, constructed on the same principle as the large one. This observatory at Benares is said to have been built by the order of the emperor Ackbar; for, as this wise prince endeavoured to improve the arts, so he wished also to recover the sciences of Hindostan, and therefore directed that three such places should be erected, one at Delhi, another at Agra, and the third at Benares. Some doubts have arisen with regard to the certainty of the ancient Brahmins having a knowledge in astronomy, and whether the Persians might not have introduced it into Hindostan when conquered by that people; but these doubts, I think, must vanish when we know that the present Brahmins pronounce, from the records and tables which have been handed to them by their forefathers, the approach of the eclipses of the sun and moon, and regularly as they advance, give timely information to the emperor and the princes, in whose dominions they reside."

To the scholar, the man of science, the patriot,

and indeed to every citizen of our republic who values its institutions and its honor, and desires the diffusion of useful knowledge among his fellows, it is truly gratifying to perceive the enlightened policy of our Congress in proposing to devote a portion of the munificent bequest of James Smithson of England, to the erection and establishment of an *observatory* at Washington city. Mr. Smithson bequeathed about a half a million of dollars to the United States for the purpose of founding an institution at Washington "for the promotion of knowledge among men." During the past session of Congress, the matter was referred to a committee, of which J. Q. Adams was chairman, which committee in May presented a bill accompanied by a report from the pen of that "old man eloquent."

The bill proposes that the Vice President of the United States, the heads of certain departments, the Chief Justice, Attorney General, Mayor of Washington, three Senators and four Representatives, shall be a body politic and corporate, by the style and title of *Trustees of the Smithsonian Institution for the increase of knowledge among men.* That the principal of the fund be invested so as to secure an interest of not less than six per-cent per annum—thirty thousand dollars of the first year's interest to be appropriated to the erection of an astronomical observatory at Washington. Other branches of knowledge are to receive aid from the fund.

The report, like everything else from the pen of Mr. Adams is lucid and eloquent, and it is to be hoped that the expanded views of the writer will be fully carried out by the trustees of the institution. In reference to the erection of an observatory, Mr. Adams thus eloquently remarks:—

"The express object of an observatory is the *increase* of knowledge by *new discovery.* The physical relations between the firmament of heaven, and the globe allotted by the Creator of all to be the abode of man, are discoverable only by the organ of the eye. Many of these relations are indispensable to the existence of human life, and, perhaps, of the earth itself. Who can conceive the idea of a world without a sun, but must connect it with the extinction of light and heat, of all animal life, of all vegetation and production, leaving the lifeless clod of matter to return to its primitive state of chaos, or to be consumed by elemental fire? The influence of the moon—of the planets, our next door neighbors of the solar system—of the fixed stars, scattered over the blue expanse in multitudes exceeding the power of human computation, and at distances of which imagination herself can form no distinct conception—the influence of all these on the globe which we inhabit, and upon the condition of man, its dying and deathless inhabitant, is great and mysterious, and, in the search for final causes, in a great degree inscrutable to his finite and limited faculties. The extent to which they are discoverable is, and must remain unknown; but, to the vigilance of a sleepless eye, to the toil of a tireless hand, and to the meditations of a thinking, combining, and analyzing mind, secrets are successively revealed, not only of the deepest import to the welfare of man in his earthly career, but which seem to lift him from the earth to the threshold of his eternal abode—to lead him blindfold up to the council-chamber of Omnipotence; and there, stripping the bandage from his eyes, bid him look undazzled at the throne of God."

SODA.

A FEW ounces of soda will soften a hogshead of the hardest water. It is greatly superior to either pot or pearlash, giving a delicate whiteness to the linen, without the slightest injury, and it never, unless excess is used, in the least affects the hands.

THE MAGIC MIRROR:—OR, THE WAY TO WEALTH.

One evening—'tis an Eastern story—
The lily slept, the bat flitting,
The sun on clouds of crimson glory
Was, like an ancient Sultan sitting;
The sky was dew, the air was balm,
The camels by the tents were grazing,
A pilgrim sat beneath a palm,
Upon the Western splendor gazing.

He plucked in careless reverie
A bud beside him; was 't a flame
That quivered on his startled eye?
From earth the little lustre came.
He lisped a prayer, and half in terror,
The night had just begun to close him,
Dug up the turf and found a mirror,
And hid the sparkler in his bosom.

Next morn ere Sol's first ray had shot,
The Pilgrim gazed upon his treasure;
The edge with mystic shapes was wrought,
Wreathed in a dance of love and pleasure.
But in the centre was the wonder;
His face with youth and beauty shone!
Old Time had yielded up his plunder,
By Allah! fifty years were gone!

His hour of precious gazing o'er,
The pilgrim strayed to Bagdad city;
Then sat him by a Kiask door,
And tuned his pipe and sang his ditty;
But not a soul would stop to listen,
At last an ancient dame passed by;
She saw by chance the mirror glisten,
Stopped, gazed and saw her wrinkles fly.

A dozen like herself soon gazed,
And each beheld a blooming beauty;
The story through the city blazed,
Their alms were but a Moslem's duty!
The men and maids by thousands gathered,
Each visage won the rose's die,
The Pilgrim's nest was quickly feathered,
The mirror's name was—FLATTERY!

FARMERS' DEPARTMENT.

CUTTING OF STALKS.

Several writers have, within a few years recommended to let cornstalks stand until harvest, and then take all together. They say the corn will weigh more, and that it is not more work to harvest the crop than when the stalks are cut. The corn may be a little heavier; but suppose it is, that advantage is more than counterbalanced by the extra labor caused by the stalks not being cut, besides a loss of valuable fodder. I have, in several instances, had a frost take part of my corn before the stalks were cut, so as to kill the leaves, but not to injure the corn, and did not cut the stalks; and have, in every instance, found that it cost more to harvest the crop, than to cut the stalks and secure them, and then harvest the corn; that is, it is cheaper to secure them separately, than to take both at once. When stalks and corn are cut both at once they are too bulky, and it takes much more room to secure them than to take the stalks off first, and bind them in bundles.

Curing of Stalks.—It is a favorite method with some, to bind their stalks as soon as they think they will do, and immediately secure them under cover, and hang or set them up in an airy place. So managed, they look very nice, but do cattle like them best? This is what we want. Now it is a fact I have learned from actual experiment, that housing them is not the better way; but another way is better, as any man's cattle will tell him, if he will but try it. It is this—the next day after the stalks are cut, when the leaves are not so dry as to crumble, bind them in small bundles, and then shock them, or as it is called where I live, *pike* them—which is to set eight or ten bundles, or such number as appears to be suitable to make a pike of proper shape to shed rain, on their butts—draw their tops together and cap with two bundles—when they are sufficiently dried to keep, put them into some building, and if the butts are too green, place the bundles to stand with the butts upward. In this way my cattle prefer them to any other: there is a sweetness in them that cannot be had when dried in a building.

Mixing of Corn.—Here I shall differ from all that I have ever read, or heard spoken on this subject. The common opinion is, that the blossom on the top stalk falls on the end of the ear, and causes the mixture. This seems to me to be hardly possible, when it is considered that the silk, as it is called, lops down as soon as it has grown beyond the length of the ears, and also that it is not probable that one blossom in a thousand, or the farina, lodges on the end of the ear. My theory, and *I believe* it to be the true one is, that there is a silk from the bottom, that is, next the cob, of every kernel of corn: the silk is hollow—a tube, so to express it. Go into a field with a good glass, when this gendering takes place, and I believe there will be seen a vapor, or myriads of vapors, resembling so many spiders' webs, leading in all directions, from the top stalks to the ends of the ears—I saw it once with my naked eye. This, in my poor opinion, is the way in which corn mixes—it is by sympathy, or attraction, or whatever name the learned may call it by.

By my observation, corn seldom mixes more than two rows each way, when two kinds or colors are planted side by side—whereas if it were done by the blossom falling on the ear, I see not why it might not mix for a much greater distance, by the wind blowing the blossoms.

New England Farmer.

PLANT TREES.

If you want to thrive, plant trees: they are money at compound interest, which increases while you sleep.

In the year 1758, ninety-two fir trees were planted upon a piece of poor ground, about three-quarters of an acre in extent. The ground was waste, and poor: no extra expense was incurred, and no further attention was paid to the young trees. In 1813, they were cut down and sold for three hundred ard sixty pounds, (about eighteen hundred dollars,) which was equal to an annual rent of thirty-two dollars, during the intervening fifty-five years, or upwards of forty dollars per-acre.

A gentleman in England, whose lands were more extensive than fertile, planted fifteen hundred trees, on the birth of every daughter, upon his waste grounds—which were, on an average worth one pound sterling, on her coming of age: thus enabling him to give a handsome fortune to each of them on arriving at the age of twenty-one, without any extraordinary economy on his part; the regular thinning of the trees, at proper seasons, with barking, &c., paying off all the current expenses, besides yielding him a small rent for the land.

In Scotland, a piece of waste land was planted with sycamores—and at the end of sixty years, sold for a sum which paid fourteen pounds sterling (nearly seventy dollars) the acre, per annum, during that long period.

The planting of the *basket willow tree*, in wet, waste places, or along the margin of streams, yields more profit, proportioned to the outlay, than raising of wheat, or making of butter; and when once started, requires no further trouble than annually to cut the twigs. *It is a shame to put it in print*, and yet it is true, that annually there are large quantities of willows for baskets, imported into this country, from Holland. We also import annually, thousands of dollars' worth of baskets, ready made to our hands, from France and other countries!! Truly ours must be a rich country indeed, to enable us to perpetrate such an amount of folly every year. Farmers' Cabinet.

POULTRY.

Every person who is familiar with the habits of fowls must have noticed their fondness for animal food. Animal garbage, insects, slugs, and worms are sought for and devoured by them with great avidity. During our long winter season they are prevented by the frost from procuring a supply of animal food, and by many this is supposed to be the cause of their ceasing to furnish us with the usual supply of eggs. Some managing housekeepers, who know that eggs always bring a good

price during the season of frost, boil bran or shorts in pot-liquor, in which meat has been cooked, and which has imparted to it the animal juices, with which they feed their hens, and it is unquestionable that they derive a great advantage from it. Corn and oats parched or browned in a pot over the fire is a kind of food that poultry are very fond of, as well as boiled grain of any kind, and occasional change of food is found by long experience and observation to be highly important in promoting the health and thrift of domestic animals of every kind. Keep your fows *dry* and *clean*, give them *good lodging*, provide them with some dry dirt, ashes or old slaked lime to rub themselves in, and give them a plentiful supply of food, a portion of which should be animal, and you will not have to complain for their not thriving or laying eggs. Farmers' Cabinet.

GREEN VEGETABLE MATTER FOR MANURE.

The value of green vegetables, when put under the soil and submitted to the process of decomposition, does not appear to be fully appreciated by the farmer. The more rapid the growth of a plant, the more efficacious is it in restoring exhausted soils, a result, perhaps depending on the fact, that such plants derive a large portion of their support from the atmosphere, and of course return to the earth more than they take from it. Buckwheat and clover are striking instances of this power in green crops to fertilize soils, and both have been extensively used for this purpose. Green manuring has been more used for grain crops than for roots, but the following experiment made by Professor Parks, in 1839, will show that the good effects are not less conspicuous on roots than on grain.

"I had a trench opened of sufficient length to receive six sets of potatoes, under which I placed green cabbage leaves, while the other three had nothing but the soil. When the crop was dug up, the plants over the cabbage leaves yielded about double the produce of the other.'

Cultivator.

USEFUL FACTS FOR HOUSEWIVES.

Brittania ware.—Brittania ware should be first rubbed gently with a woollen cloth and sweet oil; then washed in warm suds and rubbed with soft leather and whiting. Thus treated, it will retain its beauty to the last.

To clean brass.—Clean a brass ketttle before using it for cooking, with salt and vinegar. Brass andirons should be cleaned, done up in papers, and put in a dry place during the summer. Vinegar or vitriol water mixed with rotten stone is a good preparation for cleaning brass of any kind.

Soap.—Use hard soap to wash your clothes, and soft to wash your floors. Soft soap is so slippery that it wastes a good deal in washing clothes.

Horse-Radish.—It is easy to have a supply of horse-radish all winter. Have a quantity grated while the root is in perfection, put it in bottles, fill it with vinegar, and keep it corked tight. It is very much improved by keeping in this way if kept from the action of the air.

Boil your molasses.—When molasses is used in cooking, it is a prodigious improvement to boil and skim it before you use it. It takes out the unpleasant raw taste, and makes it almost as good as sugar. Where molasses is used much for cooking, it is well to prepare one or two gallons in this way at a time.

To preserve suet. Suet keeps good all the year round, if chopped and packed down in a stone jar, covered with molasses.

To prevent woollens from shrinking in washing.—Woollens should be washed in very hot suds, and not rinsed. Lukewarm water shrinks them.

Under Beds.—Barley straw is the best for beds; dry corn husks slit into shreds are better than straw.

For a cold and hoarseness.—Boil a middling sized turnip, lay it in a common saucer, and pour on it three tablespoonfulls of common molasses; the juice of the turnip is extracted, and forms a sirup which will be found very efficacious in removing the hoarseness and sore throat of a common cold.

TO TAKE A RANCID TASTE FROM BUTTER.

Melt and simmer it; then dip into it a crust of bread well toasted on both sides. Bad butter may be cured by melting it in a considerable quantity of hot water, skimming it off, and working it again in a churn with the addition of salt and fine sugar.

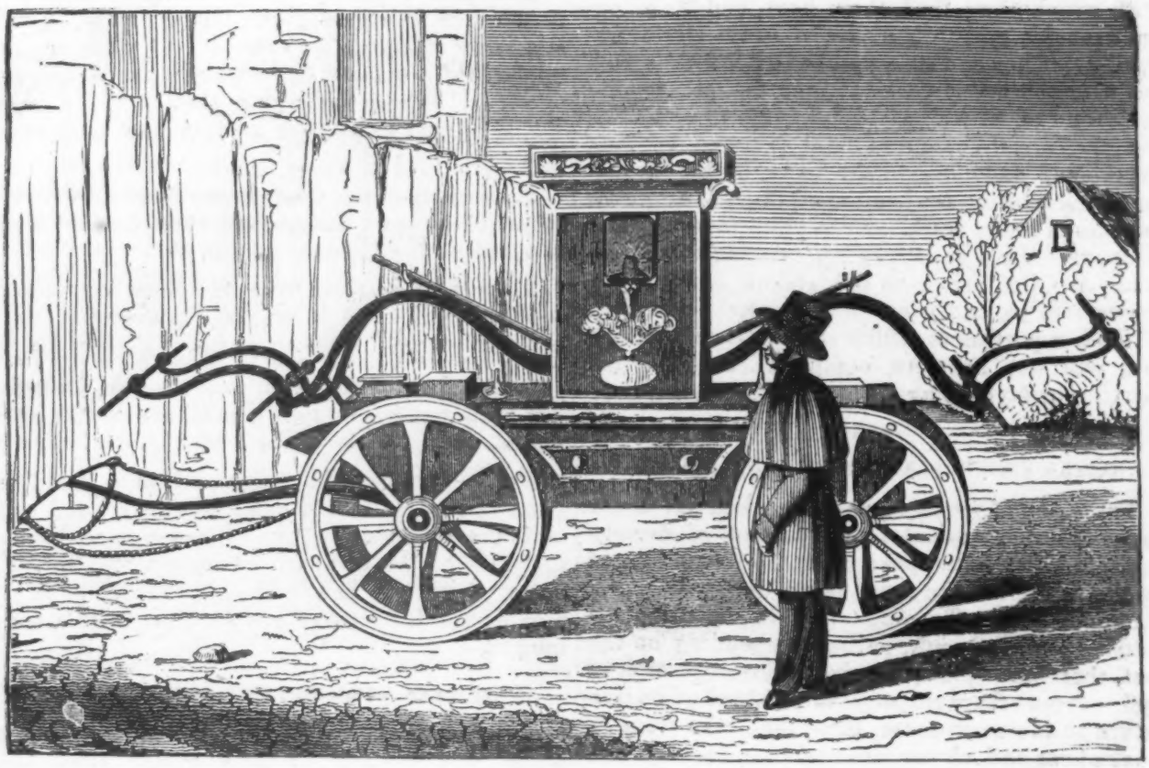
LABOR SAVING SOAP.

The following is a recipe for making the labor-saving soap, (so called,) which is an excellent article for washing, and a saving of labor. The recipes for making have been sold at from five dollars to ten dollars, and the soap seven cents per pound; but can be manufactured for about two cents. Take two pounds of sal soda, two pounds of yellow bar soap, and ten quarts of water; cut the soap in thin slices, and boil all together two hours, then strain it through a cloth; let it cool, and it is fit for use. Directions for using the soap:—Put the clothes in soak the night before you wash, and to every pail of water in which you boil them, add one pound of soap. They will need no rubbing; merely rinse them out, and they will be perfectly clean and white.

Farmers might easily save the flesh of horses and cows, and confer a great kindness to these animals, in preventing the usual annoyance of flies, by simply washing the parts with the extract of pennyroyal. Flies will not alight a moment on the spot to which this has been applied. Every man who is compassionate to his beast ought to have a supply on hand for travellers.

It is said that fresh meat may be preserved free from taint for many months, by keeping it immersed in molasses.

AMERICAN FIREMEN.—No. II.



Philadelphia Fireman and Engine.

PHILADELPHIA FIRE DEPARTMENT.

From a full description of the Fairmount water-works, and of the organization of the Fire Department of Philadelphia, we extract the following statistics.

The Fire Department is conducted by voluntary associations of citizens, who govern themselves by certain rules and defray the expenses of the purchase and care of the various apparatus, principally from their own funds. The sum of three hundred dollars only, per annum, is appropriated to each company by the corporation of the city, Northern Liberties, Spring Garden and Southwark; two hundred dollars by the corporation of Kensington, and one hundred dollars by that of Moyamensing. The first engine company in Philadelphia was formed in 1732, at the instigation of Dr. Franklin, and since the establishment of the water-works, in 1803, a hose company was formed, principally through the exertions of Roberts Vaux and Reuben Haines, Esquires, for the purchase of a hose, and of a carriage to convey it to fires; the success of which was such that there are now twenty-eight carriages of that description in the Fire Department. The hose used on these carriages is generally made of leather, about two inches and a half in diameter, and divided into sections of about fifty feet, each section being connected with brass swivel screws. There are two thousand five hundred and ninety-one active firemen in the city and districts, forty-three thousand nine hundred and ninety-one feet of hose, twenty-eight hose companies and twenty-seven engine companies. There are one thousand and seven fire plugs, which are distributed as follows:—In the city, five hundred and ten. Spring Garden, one hundred and forty-six. Northern Liberties, one hundred and forty-three. Southwark, one hundred and twenty-one. Kensington, fifty. Moyamensing, thirty-seven. For the purpose of promoting harmony in the Fire Department, and generally to increase its respectability and usefulness, the Board of Delegates of the Fire Association of Philadelphia, at a stated meeting on the fourth of March, 1839, proposed the organization of a Board of Control.

In connexion with the Department, there is a Board of Control, consisting of one member chosen from each company that has adopted the suggestion, being forty-seven out of the fifty-five. The controllers assemble upon an alarm of fire at the first corner north and west of the fire, and have the power to settle all disputes or difficul ties which may occur between any of the companies that acknowledge their jurisdiction. They are elected for one year. The government of

the Board is vested in a President, Vice President, Secretary, Treasurer and ten directors, chosen annually in August. It is the duty of the Board to superintend and direct the operations of the controllers in times of fire.

There is also in connexion (in interest at least) with the Fire Department, an association for the relief of disabled firemen. This association was organized in November 1834, and incorporated March 1835. Its object is to afford pecuniary relief to firemen who are disabled or injured by attendance at fires, and also to afford assistance, at the option of the Board of Trustees, to persons not firemen, who may be disabled by fire apparatus. All firemen are eligible to membership, by paying one dollar per annum. The payment of ten dollars, constitutes a person a member; and citizens not members of the Fire Department, may become life-members by paying the treasurer twenty dollars. The government of the association is vested in a Board of twenty-one Trustees, chosen annually on the first Monday of January, by the members of the association. Several of the best physicians of the city have kindly volunteered their services gratuitously for the association, and thus it is made an institution of a truly benevolent character.

Our engraving represents the external appearance of their engines, and a Philadelphia fireman in full costume. The hat of the fireman is made of stiff leather, his coat and pantaloons of pilot, or oil cloth, and over his shoulders is worn an oil-cloth cape, which is of material use in protecting his whole person from water.

CANTON.

Canton is one of the greatest emporiums in the East, ranking, as a port of trade, either before, or immediately after Calcutta, situated in the province of Quantong, in China; being the only place in that empire frequented by European traders: latitude twenty-three degrees seven minutes ten seconds north, longitude one hundred and thirteen degrees fourteen minutes east.

Canton stands on the eastern bank of the Pekiang River, which flows from the interior in a navigable stream of three hundred miles to this city, where it is rather broader than the Thames at London bridge; falling, after an additional course of eighty miles, into the southern sea of China. Near its junction with the sea, it is called by foreigners, Bocca Tigris. The town is surrounded by a thick wall, built partly of stone and partly of brick, and is divided into two parts by another wall running east and west. The northern division is called the Old, and the southern part, the New city. In the old city is the Mantchou or Tartar general, with a garrison of Mantchou troops under his command. The lieutenant-governor, or Fooyuen's office, is also in the old city, but the governor, and Hoppo (principal customs' officer) reside in the new city, not far from the river.

All foreign commerce is conducted in the southwest suburb, where the foreign factories are situated, and which, with the other suburbs, is probably not less populous than the city itself. The residence of Europeans is confined to a very small space, on the banks of the river; which might, however, be as pleasant as a crowded mercantile place can well be, were it not for the great number of small dwelling-boats, which cover the face of the river. The people who occupy the larger portion of these boats are said to have come originally from the south; and being a foreign and despised race, were not, at first, allowed to dwell on shore; but most of the distinctions between them and the rest of the people have been abolished.

Although Canton is situated nearly in the same parallel of latitude as Calcutta, there is a considerable difference in their temperature; the former being much the coolest, and requiring fires during the winter months. The streets of Canton are very narrow, paved with little round stones, and flagged close to the sides of the houses. The front of every house is a shop, and those of particular streets are laid out for the supply of strangers; China-street is appropriated to Europeans; and here the productions of almost every part of the globe are to be found. One of the shopkeepers is always to be found sitting on the counter, writing with a camel's-hair brush, or calculating with his swanpan, on which instrument a Chinese will perform operations in numbers with as much celerity as the most expert European arithmetician. This part of Canton being much frequented by the seamen, every artifice is used by the Chinese retailers to attract their attention; each of them having an English name for himself painted on the outside of his shop, besides a number of advertisements composed for them by the sailors in their own peculiar idiom. The latter, it may be supposed, are often duped by their Chinese friends, who have, in general, picked up a few sea phrases, by which the seamen are induced to enter their shops; but they suit each other extremely well; as the Chinese dealers possess an imperturbable command of temper, laugh heartily at their jokes without understanding them, and humor the seamen in all their sallies.

Ships only ascend the river as far as Whampoa, about fifteen miles below Canton; loading and unloading by means of native boats.

The Chinese, considered as traders, are eminently active, persevering, and intelligent. They are, in fact, a highly commercial people; and the notion that was once very generally entertained, of their being peculiarly characterized by a contempt of commerce and of strangers, is as utterly unfounded as any notion can possibly be. Business is transacted at Canton with great despatch; and it is affirmed, by Mr. Milburn, and by most of the witnesses examined before the late parliamentary committees, that there is no port in the world, where cargoes may be sold and bought,

unloaded and loaded, with more business-like speed and activity.

The fears, whether real or pretended, of disturbances arising from a want of discipline in the crews of private ships, have been proved to be in a great degree futile; the Americans, and other private traders, having rarely experienced the slightest inconvenience from any tumults between their sailors and the natives.

Provisions and refreshments of all sorts are abundant at Canton, and, in general, of an excellent quality; nor is the price exorbitant. Every description of them, dead or alive, is sold by weight. It is a curious fact, that the Chinese make no use of milk, either in its liquid state, or in the shape of curds, butter, or cheese. Among the delicacies of a Chinese market are to be seen horse-flesh, dogs, cats, hawks, and owls. The country is well supplied with fish from the numerous canals and rivers by which it is intersected.

Foreign Factories.—These extend for a considerable way along the banks of the river, at the distance of about one hundred yards. They are named, by the Chinese, hongs, and resemble long courts, or closes, without a thoroughfare, which generally contain four or five separate houses. They are built on a board quay, and have a parade in front. This promenade is railed in, and is generally called Respondentia Walk; and here the European merchants, commanders, and officers of ships, meet after dinner and enjoy the cool of the evening. The English hong, or factory, far surpasses the others in elegance and extent. This, with the American and Dutch hongs, are the only ones that keep their national flags flying. The neighborhood of the factories is occupied with warehouses for the reception of European goods, or of Chinese productions, until they are shipped. In 1822, during a dreadful conflagration that took place at Canton, the British factories, and above ten thousand other houses, were destroyed; on which occasion the East India Company's loss was estimated at five hundred thousand pounds sterling, three fifths in woollens.

For the space of four or five miles opposite to Canton, the river resembles an extensive floating city, consisting of boats and vessels ranged parallel to each other, leaving a narrow passage for others to pass and repass. In these the owners reside with their families; the latter rarely visiting the shore.

All the business at Canton with Europeans is transacted in a jargon of the English language. The sounds of such letters as B, D, R, and X, are utterly unknown in China. Instead of these they substitute some other letter, such as L for R, which occasions a Chinese dealer in rice to offer in sale in English a rather unmarketable commodity. The name mandarin is unknown among the Chinese; the word used by them to denote a person in authority being *quan*. Mandarin is a Portuguese word, derived from the verb *mandar*, to command.

Exercise and Temperance are the sure preservatives of health.

MISCELLANY.

ANCIENT INKS.

According to the Roman naturalist, Pliny, and other authors, the basis of the ink used by ancient writers, was formed of lampblack, or the black taken from burnt ivory, and soot from furnaces and baths. Some have also supposed that the black liquor which the cuttle-fish yields was frequently employed. One thing is certain, that whatever were the component ingredients, from the blackness and solidity in the most ancient manuscripts, from an inkstand found at Herculaneum, in which the ink appears as a thick oil, and from chymical analysis, the ink of antiquity was much more opaque, as well as encaustic, than that which is used in modern times. Inks of different colors were much in vogue; red, purple, blue, and gold and silver inks, were the principal varieties. The red was made from vermillion, cinnabar, and, carmine; the purple, from the murex, one kind of which, called the purple encaustic, was appropriated to the exclusive use of the emperors. Golden ink was much more popular among the Greeks than among the Romans. During the middle or dark ages, the manufacture both of it and of silver ink was an extensive and lucrative branch of trade, and the illuminated manuscripts which remain are a striking proof of the high degree of perfection to which the art was carried. The making of the inks themselves was a distinct business; another connected with it, and to which it owed its origin, was that of inscribing the titles, capitals, as well as emphatic words, in colored, and gold and silver inks.

THE TEA PLANT IN BRAZIL.

The tea plant was imported from China into the Brazils about twenty years ago, and is cultivated very extensively in some parts, particularly near St. Paul, about eighty leagues from the capital. One proprietor possesses sixty thousand feet of tea plants, some of which are six or eight years old. The tea is commonly gathered in October, November, December, January, and February: a good workman can collect nearly sixteen pounds a day. The leaf is afterward dressed and dried. The youngest leaves form the "imperial tea," while the less tender constitute the "hyson" and other varieties. One thousand five hundred feet of tea plants have been recently placed in the Jardin des Plantes at Paris; and M. Guillmin, who imported them, is of opinion, that certain parts of France, from their analogy to the Brazils in climate and soil, are well fitted for the cultivation of the plant.

It is said that the ancients were acquainted with various methods of making salt-water fresh; that they make mention, among other ways, of distillation, and of receiving the evaporation on sponges, the water expressed from which is perfectly sweet.

TRAVELLING IN THE UNITED STATES.

The following facts are extracted from an article in Hazzards "Commercial and Statistical Register, and is from the pen of an intelligent foreigner.

"Since my arrival in New York, in December, 1838, I have kept a journal of all my travels in the United States, in which I noted first, the date and hour of departure from, and arrival in every place; second, the time spent on the journey, and the duration of all the stoppages, which gave the time of actual motion; third, the distance travelled over; fourth, the manner of travelling or kind of conveyance; finally, fifth, the speed exclusive of stoppages; and sixth, the rates of charges.

"On the fourteenth of January, 1840, I finished a journey through nearly all the States of the Union; having left New York on the twenty-fourth of December, 1838. The whole time spent on the journey was one year and twenty days, during which I travelled

Upon rail roads with locomotives,	3329	miles
do do horse power,	215	
In steamboats upon rivers,	2220	
do do lakes and sea,	818	
In stage-coaches,	2614	
do sleighs,	335	
In canal-boats,	375	
In a sailing vessel,	136	
In private conveyance,	293	
On foot and horseback,	100	
Total distance,	10,435	miles

equal to one hundred and fifty degrees of the meridian.

"These ten thousand, four hundred and thirty-five miles were travelled in one hundred and seventy-five separate journeys, being at an average distance of sixty miles. The number of railroads over which I passed was sixty-four, and I took passage in twenty-four different steamboats. I have not met with a single accident of the smallest kind during the whole time."

To these statements are appended some valuable tables. From the whole document it appears that of an inland voyage of over ten thousand miles, the travel on railroads amounted to more than one-third; that the speed on railroads is fifty per-cent greater than that of steamboats—the passage in steamboats on rivers, being generally *up stream;* that the speed on common roads is less than one-third of that on railroads, and the speed of canal-boats only one-fourth; and that the average speed on the whole voyage, obtained by dividing the miles travelled by the time of motion was seven miles and a half, or half the speed on railroads.

The fare in steamboats and canal boats includes board, and is therefore the cheapest; the stage fares are forty per-cent higher than the railroad charges, and the average rates per mile, for the whole voyage was $5\frac{8}{10}$ cents.

The time spent in travelling, inclusive of stoppages, was 1835 hours; the stoppages amounted therefore to one-fourth of twenty-five per-cent of the whole time occupied, and the average speed, inclusive of stoppages, was $5\frac{8}{10}$ miles per hour.

ADVICE TO MEN IN DEBT.

Ascertain the whole state of your affairs. Learn exactly how much you owe. Be not guilty of deceiving yourself. You may thus awaken suspicions of dishonesty, when your intentions were far otherwise.

Deliberately and fully make up your mind, that come what will, you will practise no concealment, or trick, which might have the appearance of fraud. Openness and candor command respect among all good men.

Remember that no man is completely ruined among men, until his character is gone.

Never consent to hold as your own, one farthing which rightfully belongs to others.

As you are at present in circumstances of great trial, and as many eyes are upon you, do nothing rashly. If you need advice, consult only a few. Let them be disinterested persons of the most established reputation.

Beware of feelings of despondency. Give not place for an hour to useless and enervating melancholy. Be a man.

Reduce your expenditures to the lowest amount. Care not to figure as others around you.

Industriously pursue such lawful and honest arts of industry as are left to you. An hour's industry will do more to beget cheerfulness, suppress evil rumors, and retrieve your affairs, than a month's moaning.

If you must stop business, do it soon enough to avoid the just charge of an attempt to involve your unsuspecting friends.

Learn from your present difficulties the utter vanity of all earthly things.

OUR NATURALIZED FRUITS AND VEGETABLES.

Vegetables were imported from the Netherlands in 1500, there being no kitchen-gardens in England. Before this time, sugar was eaten with meat, to correct its putrescency. Turnips and carrots are thought to be indigenous roots of France. Our cauliflowers came from Cyprus, our artichokes from Sicily, lettuces from Cos, a name vulgarly corrupted into Gos. Shallots, or eschallots, were brought from Ascalon. What roving ideas, on commerce and civilization, may arise from a dinner and dessert! The cherry and filbert are from Catana, in Asia Minor; the peach and walnut from Persia; the plum from Syria; the pomegranate from Cyprus; the quince from Sidon; the olive and fig from Greece, as also the best apples and pears, though also found wild in France, and even in this country. The apricot is from Armenia. The mountain wines come from the mountains around Malaga; tent is tinto-tinged, or red wine. Sherry comes from Xeres, (the Spanish X is pronounced sh, or ch,) in the south of Spain, where the great battle, fought between the Christians and Saracens, ended in the conquest of Spain by the latter. Malmsey was from Malvasi, in the Peloponnesus, but afterward propagated at Alicant, the Canaries, and Madeira.

Contentment is true riches.

LITERARY NOTICES.

HARPER'S FAMILY LIBRARY. Five volumes more have been added to this series of valuable books, making in all, one hundred and five.

No. C. *Outlines of imperfect and disordered mental action*, by Thomas C. Upham. This work is designedly written for popular use, and, we think, will well accomplish its purpose. It is an excellent companion to Abercrombie on the Intellectual powers, contained in the same series. The author is Professor of mental and moral philosophy in Bowdoin College, Maine. An extract from the work entitled *Somnambulism*, may be found in this number of the Magazine, and will give the reader an idea of the style of the author and the contents of his valuable book.

Nos. CI. and CII. *History of British America.* By Hugh Murray, Esq. These two volumes contain a great mass of useful information concerning the British Possessions in America, and are the more valuable at this time when the attention of the people of this country is so strongly drawn to this subject, by a long pending dispute about boundary lines on both our northeastern and northwestern frontiers. A work of this kind has long been wanted, for comparatively little is known of the history of our northern neighbors, and the resources of their extensive territory.

No. CIII. *Outline history of the Fine Arts.* By B. J. Lossing. The testimony of an interested witness, *pro et con*, is generally inadmissible. We therefore leave the stand and refer the reader to the work itself to ascertain its merits.

No. CIV. *Natural History of Quadrupeds.* This volume like the one immediately preceding it, is illustrated with numerous engravings. It forms an excellent companion to *Natural History of Birds*, No. xcix, and like it is written for popular instruction.

CV. *Life and Travels &c. of Mungo Park.* This volume contains a biographical sketch of Park, a full narrative of his perilous adventures in Africa in exploring the course and termination of the Niger, with an account of his death, and the substance of later discoveries. It is a work full of interest, and a valuable acquisition to the series.

Application of the science of Mechanics to practical purposes. By James Renwick, L.L.D. 1. vol. Harper and Brothers. The title of this work expresses fully its character. It is intended for popular instruction in those things intimately connected with the well being of all, as members of a social family. Numerous wood-cuts illustrate the subject, and, with the familiar manner in which principles are explained, render it a very valuable text-book for youth.

The Countess Ida. By T. S. Fay. 2 vols. Harper and Brothers. Critics pronounce this the best production of Mr. F's pen. The avowed object of the writer was to illustrate and condemn the evil tendencies of duelling. In this he has succeeded well, and produced a tale full of interest and moral precepts.

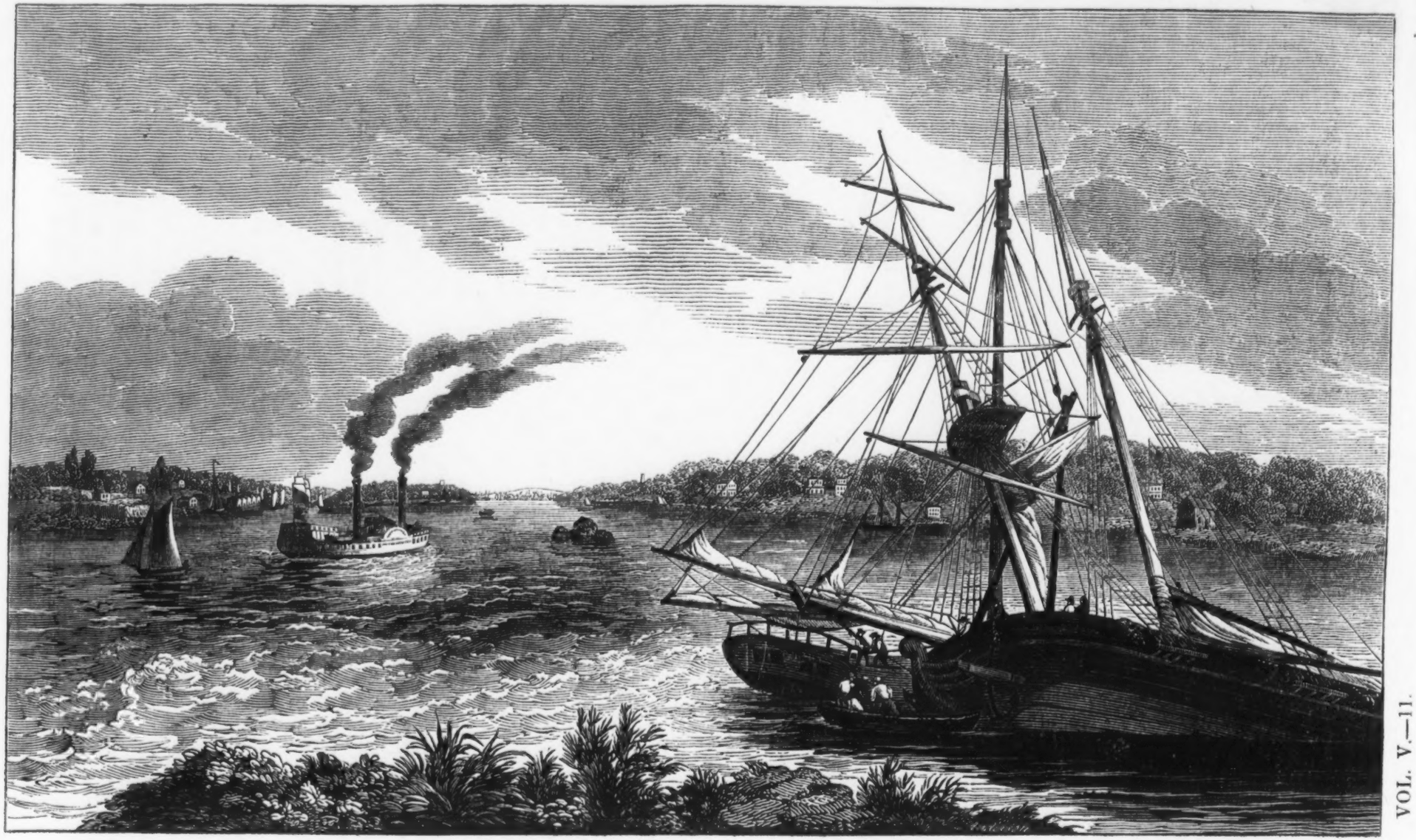
Love's Progress. By Mrs. Gilman. 1 vol. Harper and Brothers. This is a pretty story, prettily told, of the gradual developement and strength of love in the heart of woman; beginning with the purity of infancy and ending with full maturity. Mrs. G. is a pleasing writer, and never fails to interest and instruct her readers.

The Lady's Book. The number for the current month of this sterling literary magazine, has been upon our table for several days. This work has now been published by the present proprietor, ten years, during which time it has constantly and deservedly increased in favor with the public. Its contributors are some of the best writers in the country, and choice engravings embellish each number, a combination of talent which renders it an agreeable companion for the parlor or boudoir. Edited by Mrs. S. J. Hale, Mrs. L. H. Sigourney, and Louis A. Godey. Philadelphia, L. A. Godey:—New York, I. Post, 88 Bowery.

American Repertory of Arts. We are pleased to learn that this excellent work, so rich in useful matter, is fully appreciated by the public, and its circulation rapidly on the increase. We hope it may become permanently established, for it is certainly one of the most useful publications of the day, and is an honor to the institution under whose auspices it is published, and to those by whom it is conducted. The number for this month contains a specimen of the *electrotype*, a great discovery, which we shall publish in our next, with a full description. J. J. Mapes, Editor—Wm. A. Cox, Publisher, 91 Reade-st. N. Y.

The American Citizen's Manual of Reference. This is the title of a pamphlet of one hundred pages, which comprises a historical, statistical, topographical and political view of the United States, and of the several states and territories, compiled from the latest authorities by W. Hobart Hadley. We have not had time to examine its contents.

*** *Political Economy.* We invite the reader's especial attention to the excellent articles on political economy now in course of publication in this Magazine. The subject is one of great importance, and is here presented in a pleasing and lucid manner.



VIEW OF HELL GATE, FROM GREAT BARN ISLAND.

HELL GATE.

"*Here*, where we rest the gentlest waters glide,
There, hurry on a strong impetuous tide;
But yonder, gods! with tenfold thunder's force,
Dashing the war-ship in its whirlpool course."*

Modern fastidiousness, which often, with pharisaical inconsistency, strains at a gnat and swallows a camel, has endeavored to impress us with a belief that our Dutch ancestors were too puritanical to give such a name as Hell-Pot to a natural whirlpool as the one found in the East river, seven miles from the city of New-York. This is not reasoning correctly. The Teutonic nation from which the Dutch descended were possessed of a wild and powerful imagination, and gave poetic terms to every natural phenomenon. The Maelstrom on the coast of Norway, is the name of a whirlpool which varies but little in signification from the one given to the same thing in the East river. Scylla and Charybdis, between Sicily and the main land of Italy, have also a miraculous origin in the legends of Rome; the former, now a ledge of rocks of great height, was an enchantress changed by Circe, a more powerful and more wicked spirit, to this mass of stone, on which unfortunate voyagers might be wrecked and dashed to pieces when they steered too near her dreadful coast to get rid of Charybdis, now a direful whirlpool, but once an avaricious woman, condemned in her change to a ravenous and insatiate appetite for devouring her prey. In every nation where a Syrtis is found, it is in the imagination of the people of the country, in some measure, connected with their legends, in its name, at least, with infernal spirits. This is natural. The early Dutch settlers were as likely to indulge their imaginations as other people. It was indeed, when first discovered, a wonder, and is so now. He was a brave man who first ventured to examine Hell Gate and pass it. Washington Irving has told the story in a playful way. His description is a piece of easy and felicitous humor. All the other descriptions of it that we have seen, are sufficiently dull to put one to sleep. Spafford in his very clever Gazetteer of the state of New York, says:—"Horll-gate, Hurl-gate, or Hell-gate is a narrow and difficult strait in the East river, eight miles above New-York, formed by projecting rocks that confine the water to a narrow and crooked channel, and causing strong eddy currents."

The following description from the American Coast Pilot is a brief and business-like account of this singular passage-way. "Hell Gate, and the narrow pass, leading into Long Island Sound, at the time of slack water and with a leading wind, may safely be attempted with frigates; small ships and vessels, with a commanding breeze passed at all times with the tide. On the flood, bound into the sound, you pass to the southward of the flood-rock, which is the southernmost of the three remarkable rocks in the passage. On the ebb you go to the northward of the Mill rock, the stream of the tide setting that way, and forming eddies in the flood passage, which at that time is rendered unsafe. The Pot on which there are ten feet at low water, shows distinctly by the whirlpool, as also the Pan which is a part of the Hog's Back."

On the slack of the tide in the strait, the young anglers venture to bring their boat over the chasm, and while two of them with their oars keep the boat in the position required, others throw out their lines and draw from the depths below, fine, large, white-nosed black fish, or the striped bass. This sport lasts only about fifteen or twenty minutes at a time. The boat is darted with skill and velocity to the shore, on the slightest indication that the whirlpool is awakening from its momentary repose.

Vessels are frequently wrecked in this strait. When the artist sketched the view given in this number, there were two stranded vessels in sight, a faithful view of them has been presented by the engraver to give spirit, truth, and nature to the scene. The one in the distance on Rhinelander's reef, is the British Brig Evelina of Halifax, the one in the foreground is the Schooner Lexington of Kennebeck, both shipwrecked within a few days of each other. The vessels alongside are lighters in the act of removing the cargoes.

The aborigines had numerous tales of wonder in regard to this whirlpool, which they had learned to pass with skill and safety, but not without some superstitious fears of evil spirits. The first European settlers had a different, but not a much inferior love of the marvellous, than that which the red men had cherished. They heard the moanings of evil spirits before the storm, and in it their triumphant roar at the havoc they had made, of property and human lives. The drowned of all times, who had found a grave in this rush of waters, added the cry of danger as a warning for those crossing their oozy bed.

The English frigate Huzza, during the revolutionary war, in attempting to pass Hell Gate to get to sea by the Sound, struck the rocks and was so much injured that after sailing a few miles she sunk in deep water. It was supposed that she had a rich military chest on board, destined for some British port. This general impression induced some enterprising men to examine the sunken vessel by means of diving bells, but either they were under a wrong impression in regard to the money on board of her when she went down, or were not able to make thorough examination, for they found no money. The better opinion now is, that the treasure was landed before she sailed. Frigates however have passed the strait in safety. Two French frigates were blockaded in the harbour of New-York, by a British squadron during the French revolution. By the aid of a trusty pilot, watching the most favorable winds and tides, they attempted the dangerous navigation with success. One of the vessels struck the rocks once, and the other twice, but neither of them received any essential injury. Thousands were watching this adventurous enterprise with anxiety, but with different feelings; enmity has its hopes and fears, as well as friendship. Party

* Schipper Adriaen Block's yacht being at an anchor near the east end of Blackwell's Island, this poetry is supposed to have been written on the occasion.

spirit was then raging with more fury than the waters of Hell Gate.

The shores on either side of the strait are beautiful, and in their sunny quietude, viewed on a summer's morning form a pleasing contrast to the agitation of the waters, and the roar they make when the tide is low, and the rocks are visible. It is conjectured by some philosophers that Long Island was once a part of the main land, and that in some violent agitation of nature, these rocks which had perhaps been at the head of an estuary, began to give way to the omnipotence of the waters, which went rushing onward, conquering and dividing the heretofore main land.

Picturesque Beauties of the Hudson.

[Original.]

POLITICAL ECONOMY.—No. III.

OF THE PRODUCTION OF WEALTH.

BY M. WILSON, ESQ.

The production of wealth consists, not in the creation of matter but of utility, for the matter composing the globe which we inhabit is incapable of either increase or diminution. All that man can effect is to modify what already exists—to change the form or the place of matter, and give it an adaptedness which it did not before possess. These changes, wrought by human agency, give to the materials upon which it is exerted, various degrees and kinds of utility, as manifold as are the wants and desires of mankind. Some articles are thus rendered capable of affording sustenance; others serve for clothing; some defend us from the inclemencies of the season; others gratify our taste or perhaps our vanity, all species of wants, real or imaginary; and to whatever will minister to their gratification mankind attach a certain degree of value, although perhaps not always proportionate to the real utility of the object. Political economy does not attempt to distinguish between the real value of the articles demanded by the actual wants and necessities of mankind, and the imaginary value of those demanded by their folly and caprice, but, taking the estimate of value as it finds it, reasons upon the data thus furnished. The production of wealth therefore consists in the creation of *utility*; whether that utility ministers to the real or to the imaginary wants of mankind—whether for example it be found in necessary articles of food and clothing, or in ornaments and decorations.

The material, upon which labor or industry is exerted in the production of wealth, consists, sometimes, of the spontaneous gifts of nature; but, more frequently, of the products of antecedent industry; and the material, of whatever kind it be, is denominated *Capital*. The process employed in the creation of value, is called *production*: the person who performs the labor is called a *producer*; and the article produced is called a *product*. The *product* of one person often becomes the *capital* of another; thus, leather is the product of the currier, and an item in the capital of the shoemaker. The term capital, however, is not applied to the material only upon which industry is to be exerted, but also to the tools and instruments of the several arts, and to whatever is necessary to the support of the industrious agent while engaged in the business of production.

The capital of an individual is therefore, the amount of value, or property, of whatever kind, which he possesses; and it will appear in as many forms as there are various employments of men. It is continually undergoing changes by the effect of labor exerted upon it, and, if productively employed, will be in the process of augmentation. Thus, the raw materials of the manufacturer are, by his industry, converted into fabrics of still greater exchangeable value, the sale of which will remunerate to him the first cost of the materials, the interest on the sum expended, the wear and tear of tools and machinery—and liberally reward him for his time and labor. The wood and nails of the carpenter are changed into houses and furniture; the seed and manures of the farmer are changed into vegetables, and these again into the grain of the harvest;—the merchant exports one commodity and imports another of a different kind; and, in all these cases, if the labor has been skilfully directed, the result will be an increase of exchangeable value, over and above all the expenditures. In all these cases of production, the material upon which industry is exerted loses that *kind* of value which it before possessed, and receives another, and thus one value is destroyed and another produced. The cotton of the manufacturer loses the value it possessed as raw cotton, and receives a different kind of value in the form of cotton cloth. If, then, in this process, one value be destroyed, and another produced only equal to it, the *labor* is lost. If a value be destroyed and nothing be produced, both *labor* and *capital* are lost, but if the value created be greater than the value of labor and capital destroyed, the manufacturer thereby increases his wealth. Although one individual often succeeds in accumulating wealth much more rapidly than another, yet in all branches of production, where there are no arbitrary and partial restrictions upon the employment of capital and labor, the rate of accumulation is nearly the same. For, if one kind of business be unusually lucrative, capital will flow into it, and men will engage in it, until, by competition, they reduce the profits to the ordinary rate. If commerce be unusually lucrative, more men will employ their capital there; and if it be depressed,

that it consequently multiplies the productions they will devote themselves to other pursuits. Restrictions upon the employments either of capital or of labor must always be attended by very injurious effects; for whatever kind of employment it is for the interest of individuals generally to engage in, must be for the interest of the nation, and the interest of individuals can never be so well understood by government, as by the individuals themselves.

The ultimate object of the exertion of industry, being the creation of value, and as capital can be increased only by effecting some *change* in it, there arises the necessity for different trades and occupations, some of which change the *form*, and others the *place*, of matter. Thus, the farmer, by means of seed and cultivation, aided by the agencies of the sun and the earth, of rain and the atmosphere, converts the very elements to his purposes, and changes the *elementary forms* of carbon, gases, and water, into wheat and other agricultural products. Mechanics and manufacturers are mostly employed in effecting changes in the aggregate forms of matter, while the importer, by bringing goods from abroad, and the merchant, by carrying them into the country, change the place of matter. These different forms of exerted industry all concur in the creation of value, and, if left to themselves, they all flourish, or all suffer, together. There is no cause for jealousy among the different classes of producers, for the farmer requires the tools and instruments made by the mechanic, the cloths of the manufacturer, and the wares of the merchant; and these latter require the products of agricultural industry, and if the business of one be obstructed the others suffer likewise.

The industry which is required to effect a change in the *form* of matter, is called *operative industry;* and the laborers in this department are the mere operatives, or workmen, in the arts, who, guided by certain directions, put forth the physical effort necessary to create the values desired. But before this kind of industry can be skilfully exerted in any very important operations, there must be those who are able to give the necessary directions; for labor exerted without design or object will be productive of no utility. Hence there is need of two other kinds of industry; first, the industry of *discoverers*, or investigators, who ascertain the laws, or the established relations of things; and, secondly, the industry of *inventors*; or those who avail themselves of the knowledge acquired by discoverers and apply it to the direction of operative industry. In other words, there must be *science*—a knowledge of the fixed and uniform relations of things, before there can be *art*—an availment of the principles of nature and their conversion to practical purposes. Political economy, however, notwithstanding the primary importance of the departments of discovery and invention, treats almost wholly of the products of operative industry;—for that, which the inventor or discoverer creates, being an *immaterial* product—a change effected in *mind*, its value can be adjusted by no fixed rule. Discoveries in science, and inventions in the arts, often require expensive and protracted labor; but the values produced, residing in no tangible object, and being rapidly disseminated by the press, and otherwise, are little capable of appropriation; and what is universally disseminated possesses no exchangeable value. The laws of copy and of patent-right, designed to secure for limited times to authors and inventors an exclusive property in their writings and discoveries, secure to them, in general, no adequate remuneration for their labor. But practical business men, availing themselves of the knowledge thus afforded, are enabled, by the application of their industry to the capital of others, to produce articles of value which admit of appropriation. The first discoverers of the laws and properties of steam, conferred as great a benefit on mankind as those, who, availing themselves of this knowledge, applied it to the practical purpose of propelling vessels through the water; yet the products of the latter only possess exchangeable value. There is, however, need of laborers in each of these departments of industry. A community destitute of discoverers or inventors, if isolated from the rest of mankind, would remain stationary in civilization and the arts. It would be a mere machine, having the power to execute, but not the mind to direct:—like the steam engine, which, if combined with proper machinery, and properly directed, is productive of the most useful results; but whose power, if left to itself, is vainly dissipated, or ruinously exerted. And, on the other hand, were the community composed entirely of philosophers, inventors and professional men, whose industry is employed in the creation of knowledge only, they must of necessity starve; for knowledge is of no utility unless some use can be made of it. Thus we see that all classes of laborers are mutually dependant upon each other.

In the early stages of society, the application of industry to capital is productive of but a small amount of value. This is owing, in the first place, to an ignorance of those after inventions and discoveries in the arts and sciences, by which man is enabled to avail himself of the use of *natural agents;* and, secondly, to the inability which his limited means allow of creating those *divisions of labor* which are found in a more wealthy and more enlightened community. By the invention of a very simple instrument, as a bow and arrow, or a lance, the condition of the savage is materially improved, for he thus in-

creases the means of supplying his wants and gratifying his desires; and by farther and more important inventions, he continues to increase the productiveness of his labor, and extend the circle of his enjoyments. Instead of applying his own limited physical strength in all cases where power is requisite, he learns to avail himself of the greater strength of beasts of burden generally; such as the ox, the horse, and the mule; the camel, the raindeer, and the dog. He also becomes acquainted with the mechanical powers—the lever, the pully, the screw, &c, which are but natural agents moulded to his purposes; and, in a more advanced stage of improvement, his progressing knowledge converts to his uses those mighty agents of industry—the explosive force of gunpowder, the winds that waft his commerce, the gravitating power of water, and the expansive power of steam. The value of the benefits which these natural agents have conferred on mankind, by increasing the productiveness of the otherwise unassisted labor of man, can be estimated, only by comparing the advantages which a civilized community possesses over a tribe of ignorant barbarians.

But a proper *division* of *labor* also adds greatly to its productiveness. In the three departments of industry before mentioned, so extensive is the field of labor that were it not divided among many thousands, and were each individual obliged to be his own discoverer, inventor and operator, old age would come upon him, or death would close his labors, before he could receive any avails from his industry. He would be in the situation of an untutored savage, thrown on an uninhabited island, who, having everything to learn from his own observation and experience would progress little farther in discovery and invention than would be sufficient to supply him with the immediate necessaries of life. Where one individual attempts to pursue a dozen different occupations, it is evident that much time will be lost in passing from one to another—his skill and dexterity, and knowledge of the several occupations, must be less than if he devoted himself to but one; and the labor that he accomplishes must be poorly done. If the farmer were obliged to make his farming utensils, to build his own house and barns, and manufacture his own clothing, each article would be poorly made and much time would be uselessly consumed. Therefore, each individual succeeds best, and produces a greater amount of value by devoting himself to but one occupation; and hence the cause of the origin of the different trades and professions. Division of labor also shortens the period required for learning an operation, and suggests the contrivance of tools for the performance of the operation in which they are employed. The advantages resulting from a division of labor are very happily illustrated by Smith in the trade of a pin-maker. "A workman" he remarks "not educated to this business, nor acquainted with the machinery employed in it, could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire; another straightens it; another cuts it; a fourth points it; a fifth grinds it at the top for receiving the head; to make the head, requires two or three distinct operations; to put it on is a peculiar business; to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though, in others, the same man will sometimes perform two or three of them." By means of this division of labor he states that a small manufactory, with but ten laborers employed, and those but indifferently accomodated with the necessary machinery, could make forty-eight thousand pins per day. Whereas, if each person was obliged to finish off the pins one by one, each would probably make not more than twenty per day, and the ten workmen would produce but two hundred instead of forty-eight thousand.

Thus, by a proper division of labor in every art and manufacture, the labor exerted is rendered far more productive than it otherwise would be, and an immense amount of value is annually added to the revenue of a country. But there are some disadvantages attending an extensive division of labor which ought not to be overlooked, and as I cannot illustrate them better in my own words, I shall quote the language of Mr. Say, an eminent French writer on political economy. "A man" he remarks, "whose whole life is devoted to the execution of a single operation, will, most assuredly, acquire the faculty of executing it better and quicker than others; but he will, at the same time, be rendered less fit for every other occupation, corporeal, or intellectual; his other faculties will be gradually blunted or extinguished; and the man, as an individual, will degenerate in consequence. To have never done anything but make the eighteenth part of a pin, is a sorry account for a human being to give of his existence. Nor is it to be imagined that this degeneracy from the dignity of human nature is confined to the laborer that plies all his life at the file or the hammer; men whose professional duties call into play the finest faculties of the mind, are subject to similar degradation. On the whole, we may conclude, that division of labor

is a skilful mode of employing human agency, that it consequently multiplies the productions of society, in other words, the powers and enjoyments of mankind; but that it in some degree degrades the faculties of man in his individual capacity."

It should then be an object of primary importance with the citizens of every country, and especially with those of manufacturing districts, where the division of labor is carried to the greatest extent and the degeneracy is likely to become the greatest, to sow early the seeds of education, and thus prevent, if possible, the degradation from being intellectual as well as corporeal.

THE HUDSON HIGHLANDS.—By N. E. Johnson.

Suggested by an excursion to the summit of a chieftain hill on the banks of the Hudson.

Prince of an hundred aged hills!
I've climbed thy steep, repelling side,
Traced upward these, thy duteous rills,
From yonder valleys where they glide;
And here, upon thy sovereign brow,
About their founts, and near the sky,
I see thy brothers round thee bow
Most reverent to thy majesty!

II.

Strong thoughts surround thy summit bare,
Monarch of prospect large and free!
Thy vastness seems to fill my prayer,
As I an altar make of thee;
For thou, with thy confederate flock,
Foundation-linked, hast ever stood,
A hundred sovereign brows of rock,
With freedom fraught in every rood!

III.

Hark! there is language in the air,
Where gentle breezes meet and swim;
Your ancient silence seems like prayer,
Your winds are one perpetual hymn!
Before the flood, ye heights of eld,
Ye kept your deep and calm repose
And prayed, and sang, ere man beheld
Your summer bloom, or winter snows.

IV.

From age to age, from hill to hill,
That song of lofty worship rolled!
Ye crags! where eagles nestle still;
Ye founts! where oft the Indian strolled;
Your Maker's name is on your rocks,
Your thunders leap to sound it loud;
'Tis blazoned by the golden locks
Of sunrise on the mountain cloud!

V.

Could I but gather, in my song,
The might of congregated hills,
The firmness of their pillars strong,
The gladness of their many rills;
The ascension power of every cliff,
The silent fellowship they hold,
Their deep experiences, as if
The tale of all their years was told.

VI.

Oh then! by every yearning thought
Which God to human reason brings,
I'd pour the notes of glory out,
As if I swept a thousand strings!
I'd stand amid these mountain shrines,
And plant around each thrilling tone,
Till rocks, and streams, and oaks, and vines
Should sing, as if 't were all their own!

VII.

There is *one* mountain, on whose brow
Some worthy bard might thus assay
There is one lyre unsounded now,
Which waits for that maturing lay:
That mountain is the hill of God,
Which high in endless glory towers;
That lyre, to waft the song abroad,
Hath chords of ever-varying powers.

VIII.

Complete thine anthem, Holy Bride,
With the full soul of ages fraught;
And from Immanuel's bleeding side,
Nourish its one-absorbing thought:
For thou on yonder mount shalt stand,
Shalt tune alone that lyre of might;
And fill with song that heavenly land
Which God himself shall fill with light.

A contributor to the Knickerbocker, thus admirably describes the opening of summer, in the forests of the West:—

"When spring-time came, I was in my old haunts on the cliffs, observing Nature, as she proceeded to dress up her fair scenes for the gay season, and greeting the leaves and flowers as they came laughing to their places. I watched the arrivals by every soft, south wind. I thought I recognised many a constant pair of old birds, who had been to me like fellow-lodgers the previous summer; and I detected the loud, gay, carousal song of many a riotous new comer. These were stirring times in the woods! The robin was already hard at work on his mud foundations, while many of his neighbors were yet looking about, and bothering their heads among the inconvenient forks, or 'crotches.' The sagacious old woodpecker was going around, visiting the hollow trees, peeping in to inspect the accommodations, and then putting his head out to consider the prospect; and all the while, perhaps, not a word was said to a modest little blue-bird that stood by, and had been expecting to take the premises. I observed, too, a pair of sweet little yellow-birds, that appeared like a young married couple, just setting up housekeeping. They fixed upon a bough near me, and I soon became interested in their little plans, and indeed felt quite melancholy, as I beheld the troubles they encountered, occasionally, when for whole days they seemed to be at a stand still. At last, when their little honey-moon cottage was fairly finished, and softly lined, they both got into it, by way of trial; and when I saw their little heads and bright eyes just rising over the top, I could not help thinking that they really had little hearts of flesh, that were absolutely beating in their downy bosoms."

NATURAL HISTORY.

1. *Paradisea apoda.* The Emerald. 2. *Paradisea aurea.* The Siflet. 3. The Incomparable; (Le Vaillant.)
4. The Cloudy; (Le Vaillant.) 5. *Paradisea superba.* The Superb.

BIRDS OF PARADISE.

MANY of the narratives of the older naturalists are little more than amusing fables. To deduce the leading characteristics of an animal from a minute investigation of its physical construction—to watch its habits with anxious solicitude in its native haunts—formed no part of the care of those who compiled books of natural history a century or two ago. Whatever was imperfectly known was immediately made the subject of a tale of wonder. The old accounts of the Birds of Paradise are striking examples of this disposition to substitute invention for reality. Now and then some traveller brought to Europe the skin of a beautiful race of birds, of whose habits he knew nothing, except what he learned from the natives who collected them. Their plumage was of the most brilliant lustre; some were covered over the breast and back with tippets of the richest hues; others had long delicate lines of feathers, prolonged from beneath their wings, or branching from the head; and most of these trappings appeared too fragile for any use, and incapable of bearing up against the rude winds which visit the earth. The specimens also which came to Europe were deprived of feet. Fancy had thus ample materials to work upon. These birds, tender as the dove and more brilliant than the peacock, were described as the inhabitants of some region where all was beauty and purity; where no storms ever ruffled their plumage; where they floated about on never-tiring wings in a bright and balmy atmosphere, incapable of resting from their happy flight, and nourished only by the dews and perfumes of a cloudless sky. They were called *Birds of Paradise:* and the few specimens that Europeans saw were supposed to have accidentally visited some sunny spot of our world, rich with flowers and spices, but not their true abiding-place. Such were the tales that the old writers of natural history adopted; and to which even scientific persons appeared to give belief, when they named one of the species, *Paradisea apoda*, the *feetless* Bird of Paradise.

The most correct description of the Birds of Paradise is that given by Gaimard, one of the naturalists who accompanied the French expedition of discovery under Captain Freycinet, in 1817. He observed many of these birds in the island of Vaigiou, one of the islands forming the group of which New Guinea is the principal. They constitute a genus of the order of *Omnivores* (eating all things.) Their principal food is fruit and insects; and the strength of their beaks and feet admirably fit them for sustaining themselves in the thick woods where they dwell. They delight in the most inaccessible parts of forests; and when the weather is serene, they perch themselves on the topmost branches of the highest trees. They fly with great rapidity, although they constantly direct their course against the wind. This is a proceeding which they are compelled to adopt, in consequence of the luxurious trappings with which nature has clothed them; for the wind, pressing in the direction of their long feathers, holds them close to their bodies: in a contrary direction their plumage would be ruffled, and their loaded wings would act with difficulty. They, however, seldom venture from their retreats in rough weather. At the approach of a storm they entirely disappear, instinctively dreading the hurricane, which they would be unable to meet, and before which it would be equally dangerous to fly. They are extremely courageous, and ready to attack any bird of prey that excites their alarm. They have never been seen in a state of domesticity among any of the Papou tribes, inhabiting the islands where they are commonly found. Of their nests, their mode of hatching, and their care of the young, nothing appears to be known.

In the wood-cut on the opposite page, we have grouped together some of the more splendid of the Birds of Paradise, as given by Le Vaillant, in his work on Birds. The species, No. 1. (*Par. apoda*) is very remarkable for the beauty of its plumage, which is of the most varied and brilliant colors. It is especially distinguished by the long curved fillets which spring from beneath its wings, and extend in length about two feet. No. 2. (Le Sifilet) is so called from the six fillets which adorn its head. Nos. 3 and 4 are drawn and described by Le Vaillant. The latter is represented displaying its splendid plumes as the peacock does his tail. No. 5 (the Superb) exhibits pretty clearly the nature of the plumage of the Birds of Paradise. The sort of tippet upon its breast, and the fan-like ornaments of its shoulders, have no connexion either with the wings or the tail. The bird has the power of raising or depressing them; but they do not appear to assist its flight. Those on the shoulders fold down over a part of the wings like a mantle. In dimensions the various species differ considerably. The bodies of most are not larger than that of a thrush, although the thickness of their plumage makes them appear the size of a large pigeon.

One of the most beautiful of the Birds of Paradise is called the king-bird, (*Paradisea regia.*) Of this species many curious stories are current in the islands where these birds are found. The natives aver, for example, that the two principal species of Paradise birds have each their leader, whose imperial mandates are received with submissive obedience by a numerous train of subjects; and that his majesty always flies above the flock to issue his orders for inspecting and tasting the springs of water where they may drink with safety—the Indians being in the practice of taking whole flocks of birds by poisoning the water where they resort to drink. Le Vaillant considers that this notion originated from the casual observation of a strange species among a gregarious flock. This explanation accords with the account given by M. Sonnerat of the manners of the king-bird of Paradise; for being a solitary bird, going from bush to bush in search of the berries upon which it feeds, it may occasionally be seen near the flocks of those which are gregarious, where its singular plumage must render it conspicuous.

These gorgeous trappings of the various species of the Birds of Paradise excite the cupidity of man. The feathered skins form a large object of commerce between the people of the New Guinea islands and the Malays. The natives entrap the

birds or shoot them with blunt arrows; and they prepare the skins with considerable nicety, having removed the true wings, which are not so brilliant as the other feathers, and cut off the feet and legs. The absence of feet in all the specimens brought to Europe, gave rise to the fable that the Birds of Paradise had no power of alighting, and were always on the wing. Their migratory habits may probably also have given some color to this tale. At the nutmeg season they come in flights from the southern isles to India; and Tavernier says, "The strength of the nutmeg so intoxicates them that they fall dead drunk to the earth."

"Those golden birds that, in the spice time, drop
About the gardens, drunk with that sweet food
Whose scent hath lured them o'er the summer flood."

Penny Magazine.

PALMS.

We have already given in a previous volume of the Magazine illustrations of the Palm family, so valuable to the people of many regions of the East. We are now enabled to present the reader with representations of two more members of this family.

The generous character of the palm in affording food for man, has made it highly esteemed by the people of Western Asia, in all ages, and it was almost revered by the ancient Hebrews. The most extensive variety is the Date Palm, and it once abounded in the greatest profusion in India. The Doum Palm seems to be an indigenous production of Egypt, and particularly that portion called Thebais. Its fruit, however, is not so delicious as that of the Date Palm. The Library of Entertaining Knowledge contains the following article concerning the latter:—

"The date palm, though some of the family are more majestic, is still a beautiful tree. The stem of it shoots up, in one cylindrical column, to the height of fifty or sixty feet, without branch or division, and of the same thickness throughout its whole length. When it attains this height, its diameter is from a foot to eighteen inches. From the summit of this majestic trunk, it throws out a magnificent crown of leaves, which are equally graceful in their formation and their arrangement. The main stems of these leaves are from eight to twelve feet long, firm, shining, and tapering; and each embraces at its insertion a considerable part of the trunk. The trunk of the palm is in fact made up of the remains of leaves, the ends of which are prominent just under the crown, but more obliterated towards the root of the tree. The bottoms of these leaves are enveloped in membranous sheaths, or fringed with very tough fibrous matter. These leaves are pinnated, or in the form of feathers, each leaf being composed of a great number of long narrow leaflets, which are alternate, and of a bright lively green. Near the base of the leaf these

Date Palm. (*Phœnix Dactylifera.*)

Doum Palm. (*Cicefera Thebaica.*)

leaflets are often three feet long; but even then they are not one inch in breadth; neither do they open flat, but remain with a ridge in the middle, like the keel of a boat. When the leaves are young they are twisted together, and matted up with loose fibres, which open and disperse as the leaf expands. The young leaflet is also armed at the extremity with a hard black spine or thorn. They are more stiff and firm than the leaves of any other tree."

THE ANCIENT GRECIAN DRAMA.

It has been well remarked that "the history of the Grecian stage is that of the dramatic art in general;" for, from the wild and irregular orgies of the peasant-worshippers of Bacchus, to the well ordered and organized dramatic representations of Æschylus, Sophocles and Euripides, we see the same progressive improvements which have characterized the modern drama. In a Magazine like ours, the contents of which should be as varied as are the tastes of its readers, we cannot enter into such a critical sketch of the ancient drama as our inclinations prompt, or the subject warrants; and we must be content with a brief historical sketch of its rise, progress, influence and decline.

So full and clear is the testimony concerning the origin of dramatic representations in Greece, that the literary antiquarian need not be at a loss for data to establish the truth of his observations. It arose from the wild revelries of the peasantry when, filled with the exhilarating juice of the grape, they danced and sung in honor of Bacchus the god of wine and revelry. They had solemn festivals in honor of this deity, at which time they sacrificed a goat, and, besmearing their faces with the lees of wine, they joined in obscene and tumultuous dances. Each assumed the character of a satyr or fawn, and their songs during this masquerade were of the coarsest character. To these songs, some individual more gifted than the rest, would add an extemporaneous recitation, and for some time, would thus amuse an audience.

Thespis is supposed to have been the first who attempted to reduce the masquerade to anything like regularity, for the amusement of the people, and such was the crude material which this first of theatrical managers was obliged to use, in laying the foundation of that structure, the drama, which forms so attractive an amusement in all civilized countries.

Under Thespis, these masquerades assumed a different character. The actors, instead of running about among the people, were exalted, one at a time, upon a cart, or scaffold. Here their pantomimes were performed and their songs and recitations sung and pronounced, in full view of the whole of the delighted audience. Thespis was aided by Susarion, whose taste was more on the comic order than his associate's, so that the two produced quite an entertaining style of melodramatic representations. These two fathers of the drama lived in the time of Pericles, or about four hundred and fifty years before Christ, when Greece, as a republic, was at the acme of her renown.

Æschylus, who bore a conspicuous part in the memorable battle of Marathon, has been styled the Father of Tragedy. He took advantage of the invention of the *stage* by Thespis, and introduced a plurality of actors upon the "boards" at the same time. He introduced dialogue and corresponding action, accompanied by a *chorus* of vocal and instrumental music, whose songs were incorporated, in sentiment, with the dialogue. Æschylus also introduced the deceptions of scenery, (though stationary,) and instead of erecting his stage in an open space, he had it within an enclosure, by which a casual collection of disorderly persons was reduced to a company of listening spectators.

The chorus was a remarkable appendage, or rather principal, in the ancient theatre, and was long continued in modern theatres established after the Greek model. The chorus of Æschylus was composed of priests, captive virgins, and others of a solemn or sacred character, who were the contemporaries of the heroes engaged in the dialogues. They expatiated upon the acts of these heroes, and in lyric poetry sang the praises of their virtues and bravery, as did the troubadours and minstrels, those of the chiefs and knights of the age of chivalry. The strains of the chorus communicated to the audience those sympathetic feelings for the actors, which were well calculated to win their attention, and hence it was, that the real heroes of the time were so entwined with the feelings of the people, by appearing in person on the stage and having their recent acts repeated and lauded by persons in the chorus, who were actual witnesses of the events of which they sung.

The chorus, (which was frequently composed of as many as fifty persons,) was led by a single individual when all joined in one song; but they were sometimes divided into two bands, and choosing a leader for each, they replied to each other. Thus Æschylus united in the theatre of Athens, the singers and the actors in recitation who composed the irregular masquerades of the Bacchanalian feasts.

After the foundation of the legitimate drama was thus laid, Æschylus introduced a new feature—the use of the mask and buskins. The former was so painted as to represent the personage whom the actor wished to burlesque or eulogize; and the latter gave great increase to

Sophocles.*

the stature. Such additions would be a serious fault in a modern theatre, but so spacious were the theatres of the Athenians, that the imperfections of these appendages were not discernible by the audience.

The division of the drama into acts, was introduced by Æschylus, but not after the manner of the moderns. It was done by a kind of mystical dance, performed by the chorus, while moving from the stage to the orchestra, and vice versa. Although this was an interruption to the action of the piece, yet in reality the performance continued from beginning to end; for the performance of the chorus formed a part of the plot of the author. These interruptions varied in number from three to six.

Contemporary with Æschylus arose two other great poets, Euripides and Sophocles. Sophocles seemed to stand between the two, for in youth his genius was called forth by the success

* The Athenians gave to Sophocles the title of the *Bee of Attica* in allusion to the honey which he extracted from the flowers of poesy. His successful rivalry of Æschylus caused that veteran warrior and poet to retreat to Sicily, where, on his deathbed, when commanding his epitaph to be written, conjured them to mention his name as a participator in the glories of Marathon, but to make no allusion to his dramatic labors.

Sophocles pursued a path quite different from that majestic one trodden by Æschylus, and instead of scaling the mountain height of grandeur and sublimity, he thridded his way among the passions and gave to his dramas those winning features of love and sentiment which so closely entwine themselves with the heart's best affections. Pathos seemed to be his aim, and he chose rather to represent heroes subdued by the power of misfortune, than to portray them in exultation, in the triumphant car. Sophocles lived till he was ninety-one years of age. At the age of eighty he was charged with mental imbecility, and to prove the charge false he wrote his *Œdipus Coloneus*, pronounced by critics the most beautiful of all of his productions. He survived Euripides, his most formidable rival.

and honor of Æschylus, and he in his turn, when like success crowned his mature years, gave wings to the poetic genius of Euripides, and bade it soar to an unparalleled height in dramatic literature.

The style of the tragedies of Euripides approaches nearer to the standard of modern taste, than did that of either of his great contemporaries. He was the first to introduce the sentiment of *love* extensively in his dramas, and by thus touching the finest sympathetic chord of the human heart, he became extremely popular; and the fact that the poets themselves as well as the heroes who led the armies of the Athenian republic, appeared in person upon the stage, made this amusement exceedingly attractive, and gave to the actors a high rank in the republic, and princely remuneration for their services.

Comedy, having the same origin as tragedy, namely, the ceremonial worship of Bacchus—succeeded grave tragedy soon after the era of the three great dramatic poets. The comedies were chiefly parodies, burlesquing the characters and acts, first of deities, and then of men. Hercules, for instance, appeared in one of these comedies, astonishing a publican with a voracious appetite, altogether beyond the capacities of the cook to appease. In another comedy, Bacchus is introduced and all ridicule him for his cowardice; and in another, old Silenus appears sitting upon an ass with his back turned toward the animal's head. These parodies were received with pleasure by the audience, and it is a strange fact, that they delighted in these burlesques of the very gods who were the objects of their adoration and reverence.

But these parodies, (the action of which was similar to that of the tragedies,) were not long confined to the ridicule of the dwellers upon Olympus, but the shafts of satire were directed by Cratinus, Eupolis and Aristophanes against the statesmen, rulers, philosophers and generals of the day. So corrupt was the feeling of the multitude, that the more exalted and beloved was the object of these satires, and the more personal and keenly pointed were the shafts, the more popular did the prevailing comedy become, until it attracted the serious attention of the members of the Areopagus.

Of these writers, Aristophanes was the most daring and unprincipled. With the use of the mask he gave greater effect to his representations; and with boldness he thus ridiculed Socrates the wisest of the Athenians, and Cleon the political demagogue, when at the height of his power. He also desecrated the memory of Euripides, by presenting him on the stage in a ridiculous light, yet, notwithstanding these gross and daring offences, so great a hold had his gayety, wit and good humor given him upon the affections of the people, that a crown of olive was voted to the poet as one who had taught Athens the defects of her public men.

Comedy, however, soon became too licentious to be tolerated, and several edicts were issued, but in vain, to suppress such a species of dramatic representation. But when at length the sceptre of Athens passed into the hands of the oligarchy toward the close of the Peloponnesian war, comedy was effectually proscribed, and so rigidly was the law enforced, that Anaxander, an actor, was put to death by starvation, for parodying a line of Euripides so as to reflect discredit upon the government.* Aristophanes who was the father of comedy, lived to see this demolition of that structure of personal satire which he had so successfully reared.

From the ruins of this species of comedy sprung up what has been termed *middle comedy*. This was rather a return to the original comedy, and burlesquing in general terms rather than making personal attacks. Aristophanes recast several of his pieces, divesting them of their offensive features and suiting them to the spirit of the laws. But public taste could not endure them without their spicy seasoning, and they became unpopular. They soon gave way to another style called the *new comedy*, in which the principal author and actor was Menander. This had for its object the ludicrous incidents of domestic life, and approached nearer to the modern drama than anything that had preceded it. It assumed a moral tone hitherto unknown in dramatic representation, and did much toward correcting the small follies of the people of Athens. The chorus, which had been hitherto the chief medium through which satirical attacks were made upon individuals, was effectually silenced by law, and formed no part in the new comedy which, taken in the most comprehensive view, forms an introduction to the modern drama.

Compared with the modern drama, that of the ancients was extremely meager in plot and the cast of character. This remark applies to both tragedy and comedy. Generally the principal character in the play is a witty, malignant, roguish slave, who is made the confidant of a profligate son, and aids him in cheating a miserly father of his wealth. To these three is added a courtezan, or a stolen virgin, or some other odd character, which completes the list of the *dramatis personæ*, unless we add the frequent introduction of an old soldier or good natured old man to form a contrast with the other characters.

Such was an ancient stock company, and equally meager was the plot of the drama. A

* Sir Walter Scott, when noticing this fact remarks that this sentence of starvation has since been a precedent for the public, to indirectly condemn both actors and dramatists to the same appropriate punishment.

child is lost for which a father grieves bitterly. The child, a girl, falls into the hands of a slave-merchant, and a youth, (the one just mentioned) falls in love with her, and makes efforts by cheating his father to get money to ransom her. His tricks, aided by the slave, form the chief intrigue of the play. At length the birth of the girl is discovered, and the young couple are married. Such was an ancient melo-drama.

When Philip of Macedon trampled upon the independence of Athens, and the voices of her orators and philosophers and the songs of her poets were unheard amid the din of battle, and the noble works of art crumbled beneath the ravages of semi-barbarian conquerors, the lamp of learning waned, the drama was forgotten, the fountain of Helicon was sealed, and all that remained of Greece but her name when the Roman eagles hovered over her capital, was either transplanted into Roman soil or crushed into unshapen ruins. But there are deathless names allied to that of Greece that will never be forgotten as long as the muses find votaries upon earth; and when music thrills the ear, or we are enchanted with the witching deceptions of the drama in its purity, we may turn to Greece as the fountain from whence these intellectual pleasures first flowed, rich with true harmony in sound and action.

THE ANCESTORS OF WASHINGTON.

The Philadelphia Enquirer of recent date, contains the following interesting notice of the ancestors of Washington:—

"We have been favored, within the last few days, with a highly interesting account of a monument in England, erected to the memory of some of the ancestors of our beloved Washington. The gentleman to whom we are indebted for the account, is Mr. Samuel Fullaway, of this city—but who, being a native of England, returned to that country on a visit to his parents, who reside at Malmesbury, in Wiltshire. The monument in question is in Gardson Church, in the same county.

"The village of Gardson is about two miles from Malmesbury, and the church is an ancient Gothic edifice, situate in the bosom of a rich country, and surrounded with venerable trees. The country people have for many years been in the habit of conducting strangers to the church, for the purpose of pointing out the venerable memorial of the Washington Family—in former ages the Lords of the Manor of Gardson, and the residents of the Court-house, a building of the olden time—gray with the lapse of centuries.

"The monument was once a superb specimen of the "mural" style—and even now exhibits relics of richness and curious workmanship. It is to be seen in the chancel, on the left side of the altar, and is richly carved out of the stone of that part of the country. It is surmounted with the family coat-of-arms, which form a rich emblazonment of heraldry; and, although two hundred years have rolled away since it was erected, they are still burnished with gilding.

"The following are the inscriptions:—

'TO YE
MEMORY OF
SIR LAWRENCE WASHINGTON, Nite,
Lately Chief Register
OF YE
CHAUNCERYE,
Of Renowne, Piety and Charitye.
An exemplyarye and Loving Husband, a Tender Father, A Bountefull Master, A Constante Reliever of ye Poore; And to Thoas of His Parish, A Perpetuall Benefactor;
Whom it Pleased
GOD TO TAKE INTO IS PEACE,
From the Furye of the Inzuing Warrs
Born May XIV.
He Was Heare Interred,
May XXIV., An. Dni. 1643.
ÆTAT. SUAÆ, 64.'

'Heare Also Lyeth
DAME ANNE,
Is Wife, who Deceased
January XIIIth; And Who
Was Beryed XVIth,
Anno Dni. 1645.'

'*Hic Patrios cineres, enravit filius urna,*
Condere qui Tumulo, nunc jacet itle pius.'

'The pyous Son His Parents here interred,
Who hath his share in time, for them prepared.'

"The old Manor-house of Gardson is now occupied by a respectable, and, indeed, opulent farmer, named Woody—two of whose sons lately came over to this country in the ship Philadelphia, and are gone back into the state of Ohio. Mr. Woody rents his farm and house of Lord Andover. This ancient seat of the Washington family is handsome, very old-fashioned, and built of stone, with immense solidity and strength. The timber about it is chiefly British oak, and in several of the rooms, particularly in a large one, which was the old hall or banqueting-room—there are rich remains of gilding, carved work in cornices, ceilings and panels, polished floors and wainscoating—with shields containing the same coat-of-arms as on the mural monument in the church, carved over the high, venerable, and architectural mantel-pieces. Beneath the house are extensive cellars, which, with the banqueting-room, seem to indicate the genuine hospitality and princely style of living peculiar to a

'Fine old English gentleman,
All of the olden time.'

And, indeed, according to the traditions and chronicles of the country, such was the general character of the heads of the Washington family.

Soon after the civil war the family left their ancient seat, and removed to another part of the kingdom—but an old man now living in the village, named Reeves, who is ninety years of age, states that he remembers one of the Washingtons living in that part of the country when he was a boy; and that his great-grandfather remembered the last Squire Washington, living at the Manor-house. The walls of the house are five feet thick, and the entire residence is surrounded by a beautiful garden and orchards. In the old parish archives the Washington family are constantly referred to as the benefactors of the parish; and from the very earliest recorded times they seem to have been the lords of the soil at Gardson, down to the period of their leaving—when the Manor-house fell into the hands of a family named Dobbs.

"From the church and Manor or Court-house of Gardson, there are the remains of an ancient paved causeway, extending for about two miles to the far-famed abbey and cloisters of Malmesbury, founded and endowed by King Athelstan—not only celebrated for its power and splendor in Catholic days, but also as being the birthplace and residence of 'William of Malmesbury'—one of the earliest of British historians."

INDIAN PARADISE.

The great doctrine of a life beyond the grave was, among all the tribes of America, most deeply cherished and most sincerely believed. They had even formed a distinct idea of the region whither they hoped to be transported, and of the new and happier mode of existence, free from those wars, tortures, and cruelties, which throw so dark a shade over their lot upon earth. Yet their conceptions on this subject were by no means either exalted or spiritualized. They expected simply a prolongation of their present life and enjoyments, under more favorable circumstances, and with the same objects furnished in greater choice and abundance. This supposed assurance of future life, so conformable to their gross habits and conceptions, was found by the missionaries a serious obstacle, when they attempted to allure them by the hope of a destiny, purer and higher indeed, but less accordant with their untutored conceptions.

Upon being told that in the promised world they would neither hunt, eat, drink, nor marry a wife; many of them declared that, far from endeavoring to reach such an abode, they would consider their arrival there as the greatest calamity. Mention is made of a Huron girl whom one of the christian ministers was endeavoring to instruct and whose first question was, what she would find to eat? The answer being "Nothing," she then asked what she would see; and being informed that she would see the Maker of heaven and earth, she expressed herself much at a loss what she could have to say to him. Many not only rejected this destiny for themselves, but were indignant at the efforts thus made to decoy their children into so dreary and comfortless a region.

THE OLDEN TIMES.

We have before us, (a present from a lady,) a copy of the 'Connecticut Courant,' published then (as now) in Hartford, bearing date of January 11, 1774. To show the feelings of the people and the spirit of the public journals at that day, we make the following extract, which it copied from the Boston Gazette:—

"To all Nations under HEAVEN.

"Know ye, That the people of the American world are millions strong—countless legions compose their united army of freemen—whose intrepid souls sparkle with liberty, and their hearts are flinted with courage to effect what their wisdom dictates to be done. America now stands with the scale of Justice in one hand, and the sword of Vengeance in the other; and whatever nation or people who dares to lift a hostile hand against her, to invade her serene regions, or sully her liberty, shall—— Let the Britons fear to do any more so wickedly as they have done, for the herculean arm of this new world is lifted up—and wo be to them on whom it falls! At the beat of the drum she can call five hundred thousand of her sons to arms, before whose blazing shields none can stand. Therefore, ye that are wise, make peace with her, take shelter under her wings, that ye may shine by the reflection of her glory.

"May the New Year shine propitious on the New World, and Virtue and Liberty reign here without a foe, until rolling years shall measure time no more."

MINERAL WEALTH OF AFRICA.

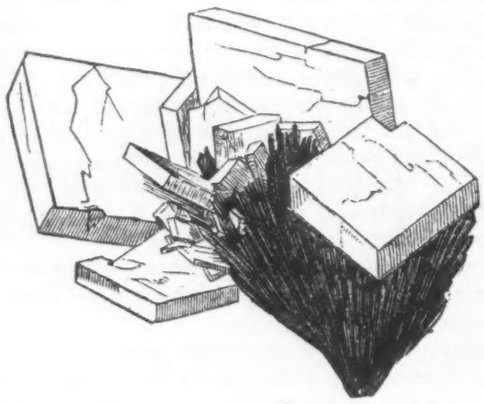
M. Russager writes from Fasoglo, on the Blue River, February 8th, 1838:—"We found rivers the alluvial soil of which is so rich in gold that the extracting of it is very feasible; but the richest spot of the whole became known to us quite at the end of our journey, in Fasoglo itself. Between the mountain ranges of Fallow and Fasongoru lies the valley of the river Adi. The whole valley is covered in an area of between two and three geographical square miles, with quartz mountains, which contain quartzose, iron ore and pure gold. We found this metal in considerable quantities in the solid rock and in the boulders of the river. I bring, among other specimens, a piece of quartz, with pure gold in which there is a grain of gold of two carats. The alluvial soil between these quartz mountains in the whole extent of the valley is, in fact, prodigiously rich in gold, and there are on the Adi many gold-washings of the negroes, of which nobody has had till now, any information, so secretly did they contrive to keep the affair. A thousand men might be set to work here at once; and, with an extremely trifling charge, which would involve no expense, in the mode hitherto observed by the negroes themselves, one may obtain every day, gold to the amount of three or four dollars.

MINERAL KINGDOM.

BARYTES.

BARYTES is a very heavy, earthy mineral, which is not found pure in a natural state, but combined either with sulphuric acid, forming sulphate of barytes or heavy spar; or with carbonic acid, forming carbonate of barytes. Some of the salts of barytes are violent and certain poisons, destroying animals by inflaming the intestines, and are often used for the destruction of vermin.

The barytes, of which we give a representation in the above figure, is usually divided into a variety of sub-species, they are not, however, of sufficient general interest to be separately enumerated.



Sparry Barytes.

The radiated heavy spar is remarkably phosphorescent when heated. This property was first observed in the year 1630, by a shoemaker, named Vincenzo Casciarolo, during his search after the philosopher's stone. When the mineral is calcined, pulverized, and made into cakes, it acquires a strong phosphorescent property by exposure to light; the phosphorescence is visible, upon taking it into a dark place. When rendered phosphorescent it is known under the name of Bolognian phosphorus.

It may be proper to state that the columnar heavy spar has been frequently confounded with white-lead spar, but is distinguished from that mineral by the following characters: white-lead spar has adamantine lustre, its fracture is conchoidal, and its specific gravity rather more than six; whereas columnar heavy spar has a pearly lustre, distinct cleavage, and a specific gravity of less than five.

LAPIS LAZULI.

THIS is the azure stone, or sapphire of the early mineralogists. This beautiful mineral is found in Persia, Bucharia, China, and in the neighborhood of the Ural chain of mountains. It forms a considerable article of commerce in China, as it is used in ornamenting the best sort of earthenware manufactured in that country. It is found massive, disseminated, and in rolled pieces, the fragments being indeterminately irregular.

Lapis lazuli is much prized by lapidaries, on account of the fine polish it is capable of receiving; and as such, it forms a beautiful ornament in the formation of boxes and other small works of art. The usual belief, that it owes its beautiful color to copper, is erroneous, as the most careful analysis furnishes no trace of that metal; iron is, however, found in considerable quantities. The name *ultramarine*, given to the pigment obtained from this mineral, is said to have been bestowed on it in consequence of the stone having been brought from beyond the sea. Lapis lazuli was once used in medicine, and from the splendid yellow veins that it presents, was called the "golden remedy."

CELESTINE.

THE Celestine is a mineral nearly resembling prismatic barytes or heavy spar. It is the *Zölestin* of Werner, and is usually divided into five subspecies. The first of these is termed Foliated Celestine. It occurs in the Calton Hill at Edinburgh, and in the red sandstone at Inverness. It is frequently found in England, in the neighborhood of Bristol, and in the islands in the Bristol Channel, particularly in Barry Island on the coast of Glamorganshire; also in amygdaloid at Bechely in Gloucestershire; and it has been procured on the Nidd, near Knaresborough, Yorkshire. It forms a bed, about one-fourth of a fathom thick, in a coal mine, which appears to be connected with shell limestone, at Suntel in Hanover; and also near Karlshütte, on the road from Göttingen to Hanover, in the Canton of Aargau in Switzerland; in the Sysser Alps in the Tyrol; and at Montecchio Maggiore in the Vicentine.

The crystals of this mineral are middle-sized, and frequently rest on each other. They usually form a rectangular four-sided table in which the terminal planes are bevelled. Its hardness is a tolerably accurate test of its identity, as it scratches calcareous spar, but is itself scratched by fluor spar.

The prismatic celestine usually consists of a long, oblique, four-sided prism, and occurs in combination with sulphur in the valleys of Noto and Mazzara in Sicily.

Fibrous celestine is of a pale blue color, and occurs massive, but it has an indistinct cleavage.

Radiated celestine is of a milk-white color. Internally it is shining and resplendent, with a pearly lustre, slightly inclining to vitreous.

Granular celestine is of a greenish color. It occurs in considerable quantities, with gypsum, at Montmartre, near Paris.

TIME is not beauty's worst enemy; it is too sensitive feelings and their free indulgence. The rosy hue of the morning cannot stand before the fierce heat of the sun; but if the noon of life were as cool as its morning, it would be as fresh and blooming.

DANIEL.—From the Frescoes by Michael Angelo in the Sistine Chapel.

MICHAEL ANGELO BUONARROTI.

Concluded.

IN the succeeding pontificate of Adrian VI., Michael Angelo, always occupied in sculpture and architecture, almost wholly abandoned painting. He endeavored to renew his labors on the monument of Pope Julius, for which the heirs of that pontiff were very impatient and threatened to make the artist account for the moneys already expended. He would have been much troubled had it not been for his friend Cardinal Giuliano de Medici, who commissioned him to build a library and sacristy for the church of St. Lorenzo to serve as a mausoleum for his family. These and two monuments for the dukes Giuliano and Lorenzo, took up the whole of his attention during this pontificate, which ended in 1523. Under Clement VII., formerly Giuliano de Medici, he went on with the chapel and library beforementioned, besides which, he executed a Christ of the natural size, to be placed on the altar in the church of Santa Maria Sopra Minerva, at Rome.

We now see him throwing aside the pencil and the chisel, buckling on his armor for the defence of his country, and in the war which broke out he was employed as chief engineer and superintendent of the fortifications. At this day the Florentines show with pride the battlements and towers as well as the unrivalled embellishments in art that they owe to his genius. Disgusted at the instability of the people, and alarmed for the republic by the plots that threatened it, he retired to Venice, but returned at the urgent solicitation of the citizens of Florence. Soon after, Florence surrendered to the Pope, and Michael Angelo was compelled to secrete himself until a pardon for him could be obtained, the price of which was, that he should finish the monuments he had begun. On the restoration of peace, he was called by the duke of Urbino to finish the monument of Julius II., and while engaged upon it, was again interrupted by the Pope, who ordered him to paint the two end walls of the Sistine Chapel. At length he was permitted to complete his task, and the monument was placed, not in St. Peter's as intended, but in the church of St. Pietro in Vinculo. Clement VII. had conceived the idea of employing him on two great historical works for the Sistine Chapel, the Fall of the angels to be painted over the gate, and the Last Judgement over the altar. Michael Angelo had composed

designs for the Last Judgement, and Paul III. being aware of this, commanded, or rather entreated him to commence the work; for he went to the artist's house accompanied by ten cardinals, an honor, (as it was then conceived and intended,) except in this instance unknown in the annals of art. On the suggestion of Sebastian del Piombo he was desirous that the picture should be painted in oil; but this he could not procure, for Michael Angelo replied, that he would not undertake it except in fresco, and that oil painting was employment for women and idlers of mean capacity. He was now on the verge of sixty years of age when he entered upon this great work, and we find him setting about it with the energy and spirit of renewed youth. He caused the plastering prepared by Frate to be thrown down and substituting a rough cast suited to his purpose, the work was completed and the chapel opened with great solemnity on Christmas day 1541, eight years from its commencement. The performance gave such satisfaction to Pope Paul III., that he settled a pension on the artist, amounting to about three thousand dollars of our money a year.

If, in the ceiling of the chapel he could not fully satisfy himself and was unable to retouch it as he wished to do after it was dry—in this immense painting he had an opportunity of fulfilling his intentions and of demonstrating to the full the powers of his genius. He peopled this space, and disposed innumerable figures awakened by the sound of the last trumpet; bands of angels and of devils; of elected and condemned souls; some flying to the regions of bliss, while others are dragged down to punishment. The subject itself appeared rather created than selected by him, and to a genius so comprehensive and one so skilled in drawing the human figure none could be better adapted: to an artist who delighted in the awful, no story more suitable than the day of supernal terrors. He saw Raphael pre-eminent in every other department of art, his memory cherished and immortalized, and he foresaw that in this alone could he expect to be triumphant; and perhaps, he indulged the hope that posterity would adjudge the palm to him who excelled all others in the most arduous walk of art. Vasari his confidant and the participator of his thoughts, seems to hint at something of this sort in two passages of his life of Michael Angelo. He informs us "that, applying himself to the human figure, the great object of art, he neglected the attractions of coloring and sporting of the pencil and fantastic novelty." * * * Neither landscape, trees, nor houses are to be seen in it, and we look in vain for some degree of variety and ornament, which are never attempted, probably because he disdained to submit his towering genius to such subjects. It is more probable that discovering his strength in this style he attempted no other. Thus he proceeded as in his own peculiar province, observed no limits and wished for no control. That a course so far above the sphere of all that had gone before him, and all that surrounded him in a world of thought and amid a race of beings of his own creation should have led even the mind of Michael Angelo astray cannot be wondered at, and we must look upon his wanderings from truth and even propriety with indulgence. It is the right of genius like his. Criticism and censure of such a work as the Last Judgement should be ventured upon with caution, but at the same time his most ardent admirers can find no apology for the unnecessary and strange manner in which he has confounded sacred with profane history: for introducing the angels of Revelation with the Stygian Ferryman, Christ setting in judgement and Minos assigning his proper station to each of the damned. To this profanity he added satire, by portraying in Minos the features of a master of ceremonies, who, in the hearing of the Pope had pronounced the picture more suitable to a bagnio than a church. It is said that not only the likeness of the master of ceremonies but many others of higher dignity, even cardinals themselves, whom he disliked he introduced in the picture in no very enviable position among the damned; a grievance that was represented to the Pope to be remedied, without success, for the pontiff facetiously replied, that "Michael Angelo had placed them beyond his authority; had they been in purgatory he might have helped them."

The Last Judgement was filled with such a profusion of nudity, that it was in great danger of being destroyed by Paul IV., who proposed to whitewash it, and was hardly appeased by a correction of its most daring indelicacies, by drapery introduced by Daniel de Volterra, on whom the facetious Romans conferred the nick-name of the *breeches-maker*.

Near to the Sistine chapel, Antonio de San Gallo, the architect, built another, called the Paoline, in honor of the Pope, who ordered Michael Angelo to paint two large pictures for it. This he accomplished, and though an old man, produced in a short time, two pieces, the subjects of which were the martyrdom of St. Peter and conversion of St. Paul, now almost obliterated by the smoke of candles and incense. The Pope often consulted Michael Angelo on his buildings and when San Gallo died in 1546, his holiness conferred on him the title of architect, which he accepted only on the condition that he should receive no salary. He was now called upon to carry on the great work of St. Peter's, in executing which, he deviated from the Saracenic model of San Gallo, to adopt a more christian and superb one of his own, in the form of the

cross. Having commenced his labors on this edifice, before the end of the pontificate of Paul, it had assumed a general form and character. As in the progress of this work, he had chosen his own workmen and dismissed others, the latter, naturally enough, raised cabals against him and the most malicious reports were circulated about him. These machinations went so far that efforts were made to remove him from his situation; but fortunately, Julius III. the successor of Paul proved his friend, and shielded him effectually from his enemies. The sculptor and painter now became the architect of his time, and nothing was done at the Vatican, nor the Pope's villa in the Flaminian Way, without his advice and superintendence. In 1555 that pontiff died and happy had it been for Michael Angelo, if he had passed from the stage of life with him. The clouds that gathered about the evening of his days saddened his heart and the remainder of his life was an harassing round of trials, proceeding from the fatigue, caprice and opposition to which he was subjected. Under all the old man, unbent in mind and body with the weight of fourscore years, went on with his vast undertaking, and even furnished designs for other works with the alacrity of a youthful mind. Notwithstanding this, his adversaries multiplied, and Buonarroti, finding that he had lived too long, was anxious to retire from a scene of so much vexation and persecution that he felt he so little deserved. "They speak of me" said he in a letter to a friend "as if I had crucified Christ." The old man was doomed to suffer on, for the Pope refused to allow him to retire and he retained the place which he had so long and so honorably filled till his death, February 17, 1563, at the advanced age of eighty-eight years, eleven months, and fifteen days. His last words were, "*My soul I resign to God, my body to the earth, and my worldly possessions to my nearest of kin.*" Then, turning to those around him, he said, "*In your passage through this life, remember the sufferings of Jesus Christ.*"

Michael Angelo was of a middle size, bony make and rather broad over the shoulders. His complexion was good, his forehead square, his eyes small, and his nose flat being disfigured by a blow which he received when a youth from his fellow-student Torrigiano.*

In his childhood, Michael Angelo was of a weakly constitution and to guard his health he was very abstemious, seldom partaking of the pleasures of the table; for he used to say, "however rich I may have been, I have ever lived as a poor man." The love of wealth formed no part of his character; and when offered lucrative commissions, he generally declined them, being more stimulated by friendship than the desire of gain. He was devoted to his art and pursued it in all its distant connexions, leaving no branch of knowledge unacquired that would assist him in reaching that perfection he sought. To this singleness of purpose, however he may have varied the use of his ample means thus gathered, may be traced the source of his strength which, aided by a sublime and comprehensive genius, bore him triumphant through his great achievements. Whatever he touched, came from his hand with the impress of art and poetry and inspiration; for his mind had received its nurture and vigor at the purest fountains of each. They still flow on, but of the thousands that have sought them, there has been but one Michael Angelo.

And here let us add one word to the rising artists of our own land. Let them remember that "nothing is denied to well directed industry and that nothing can be achieved without it." The fabric of Michael Angelo's greatness was built stone by stone. No precocious effusion, no flattery nor sudden success diverted him from his onward high purpose. He explored the untrodden paths of design to the highest heaven of invention, and in a language common to the whole world displayed its sublime wonders. And yet he did this by no mysterious means. An ardent passion for his art and all its kindred associations combined with genius, industry and perseverance, were the talismans that made him great.

It is a vulgar error to suppose that grace and beauty were beyond his attainment. Among the giants of the mind that were his models, the delicate beauty and celestial loveliness that characterizes the forms of his great rival, Raphael, would be out of place, but there are figures by Michael Angelo that even in this cannot be surpassed. The Eve of the Sistine chapel turns to thank her Maker, on her creation, with an attitude that would do honor to Raphael himself.

None of his paintings are to be seen in public, with the exception of those of the Sistine and Poaline chapels, and those described as his, are all the works of other hands. During his residence in Florence he painted an exquisite Leda for Alphonzo duke of Ferrara, to whom, however, it was not sold. Michael Angelo offended at the manner in which it was demanded by one of the courtiers of the duke, refused to let him have it; but made it a present to one of his pupils Antonia Mini who carried it to France. Vasari describes it as "a grand picture, painted in distemper that seemed as if breathed on the

* Benoventuo Cellini in his autobiography, gives from the mouth of Pietro Torrigiano himself, an account of this quarrel. "This Buonarroti and I went, when we were children, to learn to draw in the church of the Carmelites, at the chapel of Masaccio; and it was afterward customary with Buonarroti to rally all those who were learning to draw there. One day, among others, a sarcasm of his, having stung me to the quick, I was provoked to an uncommon degree, and, having doubled my fist, I gave him so violent a blow upon the nose, that I felt the bone and cartilage yield under my hand as if they had been made of paste; and the mark I then gave him, he will carry to his grave."

JEREMIAH—From the Frescoes by Michael Angelo in the Sistine Chapel.

canvass." This painting was burnt in the reign of Louis XIII. It is said there is also one of his paintings representing the Virgin and the Divine Infant in an upright position, standing near the cradle upon a rock, a figure drawn of the size of nature, formerly in the possession of Mocci at Florence; and afterward transferred to the cathedral at Burgos where it still remains. Michael Angelo also executed in distemper a circular Holy Family now in the Tribune at Florence and in a high state of preservation. It is praised by some even for its color and is often reverted to as an oil picture.

Many other pictures and figures, some large historical compositions were designed by Michael Angelo and painted by Sebastian del Piombo, an excellent colorist of the Venetian school and pupil of Bellini and Giorgione. Michael Angelo entertained a strong friendship for Sebastian, preferring him before all the disciples of Raphael, and jealously advanced his interest. When the great work of the Transfiguration by Raphael had been placed in the church of St. Peter in Montoria, Buonarroti advised Sebastian to paint the Resurrection of Lazarus to stand in competition with it, furnished for him the design and lent his assistance in the execution of the work. This great picture was much admired, although the wonderful composition, design, expression, and grace displayed in the Transfiguration maintained the supremacy. It is now in the National Gallery in London. Michael Angelo was also on intimate and friendly terms with Daniel de Volterra when he painted in the Farnese palace at Rome, and it is said that Buonarroti, during his absence mounted the scaffold and sketched a collossal head that is still to be seen there. Volterra let it remain, that posterity might judge of the powers of Buonarroti who without premeditation and in mere jest, had finished a work in such proportions and so perfect. The wonderful descent from the cross in the church of the Trinita de Monte, which together with the Transfiguration by Raphael and the St. Jerome by Dominichino were considered by Nicholas Poussin, the three most capital pictures in existence—was executed by Volterra with the assistance of Michael Angelo. This noble fresco fell to pieces and perished in the attempt of the French to remove it from the walls.

The portraits of himself ascribed to Michael Angelo, are very doubtful as regards their having

come from his own hand, Vasari knew of no likeness of him except the figure cast in bronze by Ricciarelli and two portraits, the one painted by Bugiardini the other by Jacopo dal Conte. From these are derived the very old and well known portraits, preserved in the Ducal gallery at Florence, in the collection of the Capitol at Rome, in the Caprara palace at Bologna and that in the collection of Cardinal Zelada at Rome.

Michael Angelo had no children, as he was never married. He used to say "My works must supply the place of posterity; and if they are good for anything they will live hereafter." He continued to study to the end of his long life, but never was satisfied with anything he did. Cardinal Farnese found him one day alone in the Coliseum and on expressing surprise to find him among the ruins, he answered, "I go to school that I may learn something." A little before his death he sketched an old man with a long beard, in a child's go-cart, an hour-glass before him, and over all, the motto, *Ancora Imparo.*

The social and friendly relation in which he stood among the artists of his time, the readiness with which his aid was ever given, and the support and protection he afforded to genius whereever it displayed itself, brighten the verdure that wreaths his memory. "There was" says Cellini, in describing a "humorous frolic," "established in Rome a society of painters, statuaries and goldsmiths, the best that had ever been known in that Capitol: the founder of this society was a statuary named Michael Angelo, possessed of such extraordinary abilities, that he might justly vie with any artist belonging to the profession; but still more eminently distinguished for being the most complaisant and obliging man in the universe: he was the oldest member of this society; but might be considered as the youngest, on account of his vigorous constitution. We were frequently together at least twice in the week. I must not omit that to this society also belonged Julio Romano a painter, and John Francesco, both excellent pupils of the great Raphael d'Urbins."

The merits of Michael Angelo as an artist, have been long the subject of discussion and his numerous works have been a fruitful source of criticism for three centuries, from the tyro with his port crayon, to the robed professor in his elbow-chair. His faults and his praises are still the gossip of the schools, and will be as many centuries to come. His name has become a technicality to express his own peculiar style, and he stands first in the highest niche in the temple of art. Fuseli to whom he was a demigod thus speaks of him, and with this extract we conclude.

"Sublimity, conception, grandeur of form and breadth of manner" says W. Fuseli, "are the elements of Michael Angelo's style; and by these principles he selected or rejected the objects of imitation. As painter, sculptor, or architect, he attempted, and above any other man, succeeded to unite magnificence of plan and endless variety of subordinate parts, with the utmost simplicity and breadth. His line is uniformly grand. Character and beauty were admitted only as far as they could be made subservient to grandeur. The child, the female, meanness, deformity, were by him stamped with grandeur. A beggar rose from his hand the patriarch of poverty; the bump of his dwarf is impressed with dignity; his women are moulds of generation; his infants teem with the man and his men are a race of giants. This is the *terribil via* hinted at by Agostino Carracci. To give the most perfect ease to the most perplexing difficulty, was his exclusive power. He is the inventor of epic painting in the sublime compartments of the Sistine chapel. He has personated motion in the groups of the cartoon of Pisa, embodied sentiments on the monuments of St. Lorenzo, unravelled the features of meditation in his Prophets and Sibyls; and in the Last Judgement, with every attitude that varies the human body, traced the master trait of every passion that sways the human heart. In painting he contented himself with a negative color, and as the painter of mankind, rejected all meretricious ornament. The fabric of St. Peter's scattered into infinity by jarring parts by his predecessors, he concentrated: suspended the cupola, and to the most complex gave the air of the most simple of edifices. Such was Michael Angelo, the salt of art; sometimes he had moments and and perhaps periods of dereliction, deviated into manner, or perplexed the grandeur of his forms with futile and ostentatious anatomy; both met with herds of copyists, and it has been his fate to have been, and still to be, censured for their folly.

CHOICE OF A WIFE.

I ask not *beauty*—'Tis a gleam
That teints the morning sky;
I ask not *learning*—'Tis a stream
That glides unheeded by.

I ask not *wit*—It is a flash
That oft blinds reason's eye;
I ask not *gold*—'Tis glittering trash,
That causes man a sigh.

I ask *good sense*, a *taste refin'd*,
Candor with *prudence* blended;
A *feeling heart*, a *virtuous mind*,
With *Charity* attended.

MERCANTILE BIOGRAPHY.

In presenting to our readers the present paper, embracing biographical notices of merchants who have been eminently distinguished for the energy manifested in the pursuit of their various vocations—from the most humble beginnings to the proudest results of human industry—for their public and private virtues, and the influence which they have exerted on the domestic, moral, political, and intellectual condition of mankind, we would offer a few prefatory remarks.

It has been said, and with truth, that neither the past nor present age has presented a single life from which, if a faithful narrative were written, some valuable information might not be drawn. If such an assertion be tenable, when applied to the recorded actions in the great mass of society, charged with its follies and crimes, how much more forcibly must it apply to the biography, which *selects* and holds up as mirrors to the world those only whose wisdom and virtue are calculated to make a lasting and beneficial impression; which, while it consecrates the ashes of the dead, rescues from the destructive influence of time all that is worthy of remembrance—presents us with the living characteristics of the man as he stood before a scrutinizing earthly tribunal—enables us to follow him from the dawn of intellect to the termination of an active, well-spent life—to see him triumphing over every obstacle which poverty or misfortune presented to his indomitable mental and physical energies—and finally, to appropriate to ourselves the results of an experience thus presented. In reference to *American* merchants, we intend that the "biographical notices" shall furnish a supplement to the future history of our country, in which those finer shades of character, most interesting to the community, which are lost in the wide survey and generalizing spirit of the historian, shall be faithfully and accurately delineated.

As the second commercial country on the globe—with ships navigating every sea and bartering with every nation—our merchants necessarily fill an important station in the world's eye; on their honor, integrity, and energy, depend our national character abroad, and our internal condition at home. A fertile and extensive territory may form the *basis* of our wealth; but commerce is to its productions what machinery is to the raw material—it fashions, shapes, and sends forth.

It is an historical fact, that Napoleon, when his imperial flag waved over thirty millions of people, derisively designated England as the "nation of shopkeepers." Time, however, with its train of events, taught him to see, in his sad reverses of fortune, when stripped of his glories—exiled to a solitary rock in the Atlantic—deserted by his followers—a monument of fallen grandeur and defeated ambition—that to the pecuniary sacrifices and the devoted patriotism of the "shopkeepers" he was indebted for that unyielding opposition to his sway by which Britain was distinguished, when, by his celebrated decrees and embargoes, he had closed the ports of Europe against her shipping; when monarchs were his puppets, thrones his footballs, and subjugated nations the outposts of his military camp. If such were the national consequences attendant on the mercantile character and resources of England, what importance must ultimately attach to them in a country like our own, the shores of which embrace two oceans—the commerce of which already competes with its great rival, in every quarter of the globe—whose extensive lakes are whitened with the sails of inland navigation, and whose railroads form a chain of internal communication which unites the most distant sections of an active population—levelling mountains, extending over rivers, and setting distance and time at defiance?

Taking leave of the influence which the mercantile character exerts upon our external relations, we will now briefly advert to its effect on our physical, moral, and intellectual conditions.

To our merchants we are chiefly indebted for the temples of religion, the halls of benevolence, the marts of commerce, and the noble literary institutions which adorn and distinguish our cities. Among the latter institutions, we might place the "Athenæum at Boston," the "Institution for the Blind," the "United States' Bank and Girard College in Philadelphia," the "Exchange at Baltimore," the "Astor-House," and last, though not least, the "Mercantile Library," the proud boast of our city. Never has a nobler monument been erected to departed worth, than this *twenty thousand* volumed association, with her lectures and her great moral influences, offers to the memory of her mercantile founders, whose names are engraven in indelible characters on her portals, and are consecrated in her prosperity.

New York may safely challenge the world to produce an institution of a similar character, so important in its consequences to a rising and energetic community.

In the midst of the fluctuations of commerce, and the energies necessarily devoted to its steady advancement, it will be seen, that the merchant has not been undistinguished among the moral and religious benefactors of mankind, nor unmindful of the injunction left by the mild Founder of Christianity to his followers—"Go ye forth unto all nations, and preach unto them the gospel of truth." We owe to the benevolence of our mercantile community a great portion of the means raised to support missionaries among the aborigines, while some of its members, unaided, have sent forth the bearers of the gospel mission to the most distant nations of the earth.

The mental and physical endurance which has distinguished the mercantile character, particularly in our own country, is not one of its least extraordinary features; many of its possessors, who now rest from their labors, rose from extreme obscurity—saw their hopes and expectations blasted again and again—yet rising with renewed vigor from every stroke of fortune, eventually succeeded in acquiring an affluent independence;—the just reward of their unabated perseverance.

Nor should the untarnished honor and integrity of the merchant, unhappily exemplified in the ruinous commercial change to which he has been subjected for several past years, pass unnoticed;

many, it is too painfully true, have been compelled to sink in the struggle, but, like the wife of Cæsar, have preserved a purity of character untainted even by suspicion.

In devoting a portion of the Magazine to Mercantile Biography, we are influenced by a desire to exhibit the strong points of character which have distinguished the patriarchs of commerce, as furnishing examples to the young merchant of the present and future times, and as a stimulus to the attainment of the enviable distinction which they have acquired.

The sources from which the following notices have been selected are various, and, generally, more contracted than we could have desired. In the future numbers we shall enter more into detail, as examples are furnished, which we respectfully solicit from those who may have it in their power to aid us in this department. The first name which we present to our readers, at this time, is that of

GEORGE CABOT,

a distinguished merchant and statesman, born in Salem, Massachusetts, in 1752. He was educated as a merchant, and for several years visited foreign countries as a factor for his father, who was an enterprising and opulent ship owner. He was considered a young man of talent, and soon after commencing business, he was elected a member of the Massachusetts' Provincial Congress—of which General Warren was president. The good people of Massachusetts, wishing to alleviate the distresses of the times, proceeded to consider the propriety of fixing a maximum price upon foreign goods. This he opposed, with such strength of reasoning as to prevent any restriction upon commerce.

During the war, he was an active merchant—he, with his brother, having at one period of the contest, twenty privateers of a large class, carrying from sixteen to twenty guns each. These vessels were very successful for four or five years; but the British, towards the close of the war, having lost more than one thousand seven hundred merchantmen, grew wiser, and fitted out a large number of frigates and gun-brigs, that were superior in force to most of our privateers, and a great portion of them were taken. The Cabots were severe sufferers, losing nearly all their armed ships before the war closed.

When peace was restored to the country, Mr. Cabot was active in bringing the people to see the necessity of forming a sound and permanent general government. With others, he used the public press to enlighten the country upon the great doctrines of civil and political liberty.

He was active in establishing a state constitution for Massachusetts, and afterwards, in 1788 was a member of the convention for adopting a constitution for the United States. Soon after the constitution went into operation, he was chosen by the legislature of Massachusetts as a senator in congress. In 1798 he was appointed, by John Adams, Secretary of the Navy, but he declined the appointment; yet he took an active part in assisting the government to build and equip a navy. Liberal loans were subscribed by the merchants in every part of the country, and Mr. Cabot was among the foremost. The government, fired at the insults and indignities offered our commerce by France, were so active in building ships of war, that a few months were sufficient to take the timber from the forests to construct a sloop of war, and in a few more days to get her ready for sea.

A respectable force was soon on the ocean, and earned laurels wherever they met the enemy.

During these dark hours of our history, when Hamilton and Ames were full of apprehension for our destinies, Mr. Cabot was laboring with them in opening the eyes of the people, blinded by party feuds. It is said that Ames, always flowing, and sometimes too redundant, consulted Mr. Cabot in regard to his publications, and frequently submitted to his judgement when they differed in opinion.

For many years of the latter part of his life, Mr. Cabot resided in Boston, where he was held in the highest estimation. If there was a matter of mercantile usage to be settled, he was consulted;—if there was a misunderstanding between merchants, he was made arbitrator; aye, even if there were an affair of honor to be settled, his opinion was law. In 1815, he was elected from Suffolk county as a member of the Hartford Convention, and was made president of that body. Where he was, every one was satisfied that all would be done with decency and correctness, both in manner and principle. He was brave, and discreet as brave. His ambitious days, if ever he had any, were over, and prudence and judgement were, at the time of the Hartford Convention, his great characteristics. The person of Mr. Cabot was of the finest cast. He was tall and well proportioned. His head was a model for the sculptor. There was a classical expression of the countenance, that made him the object of observation to every stranger. His movements were dignified, and his voice sonorous and commanding. Looking at him, you would say, there is a gentleman; and no one would question the assertion. He was as amiable as excellent; there was no asperity in his nature. He took a broad and noble view of every subject, and uttered his opinions with fearlessness, but with modesty—and his decisions were as oracles. Mr. Cabot died in April, 1823, in the seventy-second year of his age; and enjoyed through that long period, all that philosophy, philanthropy, and religion, could give to life. The civic wreath of such a man should be green for ever.

WILLIAM GRAY,

one of the most successful of American merchants, was born in Lynn, in the county of Essex, and commonwealth of Massachusetts, in the year 1751. He came, when quite a boy, to Salem, and was an apprentice, first to Samuel Gardner, Esq. an active merchant, but left him and finished his apprenticeship with Mr. R. Derby, also a business man of that place. Young Gray was an enterprising and indefatigable apprentice, and had acquired the confidence of the principal

merchants in Salem when he commenced business for himself, which in that careful and industrious town, was a fine capital to begin upon. Mr. Gray was early prosperous in his affairs, and in less than twenty-five years after he had commenced business, was considered and taxed as the wealthiest man in the place, where there were several of the largest fortunes that could be found in the United States. He was all activity, and at times had more than sixty sail of square rigged vessels. It was a fact that no moderate breeze could blow amiss for him, for every wind of heaven carried for him some vessel to port. For more than fifty years of his life he rose at the dawn of day, and was shaved and dressed before the common hour for others to rise. Being dressed, his letters and papers were spread before him, and every part of his correspondence brought up. He was, at the same moment that he put millions on the adventurous tracks for gain, with the boldest character, careful of all the small concerns, of expenditures. This he considered as belonging to the duty of business. He had married, in early life, Miss Chapman, of Marblehead, the daughter of a distinguished lawyer. They had five sons and one daughter. Mrs. Gray was a woman of great powers of mind, well cultivated, and for many years was among the first in the social circle.

During the embargo, Mr. Gray took side with Mr. Jefferson, notwithstanding his interest suffered greatly. His ships were rotting at the wharf. This course brought against him his old friends, and raised up a numerous host of new ones. He now removed to Boston, and was elected Lieutenant-Governor of the state. He had several times been elected to the state senate, but politics were not his stronghold, and he sunk the great merchant in the common-place politician. His immense wealth was used for the wants of the government, with the liberality and confidence of one who believed that a government should not be poor when individuals were rich. It is doubtful whether any capitalist in the United States did so much for the exigencies of government as Mr. Gray. And while others were speculating on the depreciation of securities, no one will hesitate to say that his exertions were dictated by the patriotism, with only the hopes of an honest remuneration. After the close of the war, he launched again into commerce, but not with his former success. Times had changed, but he had not changed with them and what was a safe calculation once, was not so now; but still there can be no doubt but that he died a rich man, although no public inventory was ever taken of his estate, as his heirs gave bonds to pay debts and legacies—all the law of that state requires. Mrs. Gray died about two years before her husband, and his eldest son since his death. Mr. Gray was happy in his family, and was always a domestic man. He was worn out with the fatigues of business at the age of seventy-four, and departed this life November fourth, 1825.

PHILIP LIVINGSTON

descended from a respectable Scotch family, and was born at Albany, January fifteenth, 1716. He was educated at Yale College, and graduated with the class of 1737. He became a merchant in New York after leaving his Alma Mater; and as there were but few well-educated merchants in Wall-street at that time, he was soon quite at their head, and of course had offices at his command. In 1754 he was an alderman of the city of New York, and after serving in this capacity for four years, was sent to Albany, as a representative of the city. In this body he soon became a leader, and directed its attention to its great interests of commerce; New York being then behind Boston and Philadelphia in her exports and imports. He was one of the committee of correspondence with the agent for the colony in England, the celebrated Edmund Burke; and his letters abound in information and critical remarks. Mr. Livingston was in congress in 1776, and affixed his name to the declaration of independence, for which he was a strenuous advocate. He was a member of the senate of New York, on the adoption of the state constitution; after which, under the provisions of that constitution, he was elected a member of congress; but he was not long permitted to devote himself to the service of his country, for on the twelfth of June, 1778, he died, with *angina pectoris*, or the dropsy of the chest, often twin-messenger of death. He was a warm and fearless patriot in severe times, when thick clouds enveloped our political horizon.

FRANCIS LEWIS,

one of the New York delegation in congress when the declaration of independence was made, was born in Wales, in 1723. He was partly educated in Scotland, and then sent to Westminster, where he became a good classical scholar. In London he became an apprentice to a merchant, with whom he continued until he was of age. He then left England for America with handsome prospects, and set up business in New York. He was agent for the British colonies in 1756, and was taken prisoner and carried to France, from which country, on his exchange, he returned to New York. He was a lover of liberty, and stood foremost among the sons of freedom. In 1775, he was sent a delegate from the provincial congress of New York to the continental congress, and was there when the declaration of independence was made. He continued in that body for several years afterwards, and rendered great service as a commercial man. He suffered much for his patriotism, the British having destroyed his property on Long Island. He had, however, the satisfaction of seeing the country prosperous, though he was not. He died on the thirtieth of December, 1813, in the ninetieth year of his age.

ROBERT MORRIS

was a native of England, but came to this country when quite young, and was educated in Philadelphia. After finishing his education, he entered a counting-house, and in a few years be-

came conspicuous as a thorough merchant. When the revolution broke out, Mr. Morris sided with the colonists, and was distinguished as a patriot. He was elected a delegate to the second continental congress, and was in that body in 1776, when the declaration of independence was signed. During the whole war, he was considered the ablest financier in the country, and Washington had recourse to him, when he could not procure any thing from congress. In 1781, Mr. Morris was appointed superintendent of finances, and was, perhaps, the only man in the country fit for the office. He had a most arduous task to perform; it was indeed gigantic, for it involved all the duties of every department of the government, so far as money was concerned. Washington had the highest confidence in him, and Franklin thought him a most wonderful man. He surprised all by his power or raising money for public exigencies, when our credit was under the worst circumstances. He provided Washington with money to carry on his southern campaign against Cornwallis, the defeat of whose army ended the war. He died on the eighth of May, 1806, in the seventy-third year of his age. It may be said of him that he was a great public benefactor.

BENJAMIN PICKMAN

was born in Salem in 1740. He was the son of a distinguished merchant in that town, and was graduated at Harvard College, in 1759.

He entered his father's counting-room after leaving college, and soon took a high stand in society.

When the revolutionary war broke out, he was lieutenant-colonel of the Salem regiment, but he had not made up his mind that the time had arrived for a separation of the two countries. He was a friend to his own, but could not come to the doctrine of a sudden dismemberment. He went to England under a furlough from the legislature, and there did much good in assisting the unfortunate who were taken prisoners in the first years of the struggle. His wife and family remained in this country until the war closed, and of course his estates were not confiscated. In 1784 he returned to his native land, and was greeted with kindness by his old friends. He now commenced business again as a merchant, but in the British spoliations lost no small part of his property. The treaty made by Jay returned him his property, and a fair interest on the same. He now relinquished all business, took his money and invested it in American stocks, and lived on its income,—most ample means for his purpose. His table was one of the best in the country. He was classical, delicate in his feelings, and unshaken in his opinions, and every one was satisfied with his hospitable board. His conversation was generally directed to ancient history, or to that of our country. He was at home in either, but made no parade of his learning. He was a man of ordinary talents, and of more than ordinary taste in classical literature. As an antiquary he was second to none; he garnered up all that was curious or strange in his neighborhood, and was ready to give it to the public provided his name could be kept out of sight.

He now placed the enjoyments of his life in ease, and never swerved from his principles. He was blessed with an excellent wife and a delightful family. They were around him and administered to his comforts. He had three sons and two daughters, and all were devoted to his happiness. He rejoiced in the success of all he knew: his heart was full of philanthropy.

His person was noble, his height over six feet, his countenance quiet, calm, but manly, and hardly bore the ordinary marks of age. In the eighty-first year of his age he sunk to sleep, without having suffered many of those pains and aches which mortal man is liable to, in this scene of struggle and anguish.

There were but few men in this world of so good a disposition, fewer still of so much intelligence or refinement, and none of greater purity of character.

Hunt's Merchant's Magazine.

NOVEMBER THOUGHTS.—MRS. C. E. DA PONTE.

More fresh the flowers, more blue the sky,
Where summer winds perpetual sigh,
And streams for ever run;
More soft upon the languid rose,
The dying hue of sunlight glows,
While every leaf more beauteous seems,
When crimsoned by the parting beams
Of day's declining sun.

The wind scarce felt, yet gently heaves
Before its course the floweret's leaves;
Is it not sweeter there,
Where round the hill, and round the tower,
And round the lover's secret bower,
It cometh to the ear?

It cometh sighingly along,
It mingles with the half-heard song
Of boatmen on the stream;
Or lover who in murmurs low,
Sings, too, his hymn where waters flow
In twilight's mystic beam.

Why is it that I cannot stray,
Where those delicious waters play,
Through woods that never fade?
Or watch, come o'er the blooming lea,
Some lonely bird, who seeks, like me,
A summer bower of shade?

Too happy in his eager flight,
To reach where bursts the golden light
Of climes that breathe of spring;
Where all serenely smiles the vale,
Untouched by storms of winter's gale,
Where he unharmed may sing,
And pour his melody to skies
Whose summer brightness never dies.

Democratic Review.

GEOLOGY OF LONG ISLAND.

ENCROACHMENTS OF THE SEA. Several examples of the encroachments of the sea on the land occur in Queens, Kings, and Richmond counties. Hog Island, as it has been called, or Middle Island the name given by the coast surveyors, is gradually wearing away in many places by the action of the waves during storms and high tides; but the N. N. E. and N. W. parts, are exposed to the waves of Long Island Sound, and are wearing away more rapidly. The materials of which this Peninsula, as well as nearly the whole of Long Island, is composed, is a series of beds of sand, gravel, loam and clay. Boulders and erratic blocks occur in one of the beds in great numbers, and as the surf undermines the cliffs, they tumble down, and all the finer materials are swept away by the tidal currents, and the oblique action of the surf on the shore. The headlands, generally, of the north shore of Queen's county, are washing away. The blocks of rock which were once imbedded in the loose soil of the island are seen on the beach, extending out far beyond low water mark.

At Oak Neck, Fox Island and Martinicock, as well as at Middle Island, the boulders extend far out at low water, and demonstrate the encroachment of the sea on the land. Middle Island and Oak Neck, are parts of a peninsula which lies between Oyster Bay and Long Island Sound. They were once Islands, but have been connected with each other and with Long Island, by beaches formed of detrital matter, swept from the headlands of Middle Island and Oak Neck. Extensive salt marshes are forming under the protection of these beaches, and are materially increased by the sand drifted from them. These beaches are observed to vary in form and magnitude, being sometimes increased or diminished in particular parts by the effects of a single storm. Fox Island, so called, was once an Island, but it is now connected with Oak Neck and Long Island on the east by a long beach. A long sand-spit of a mile and a half in length, extends to near Peacock's, where it is cut off by an inlet, which communicates with the extensive marsh between Fox Island and Long Island. This beach and spit are derived from the materials washed from Fox Island and Oak Neck.

Peacock's Point is also washing away. Stumps and logs of wood are seen below low water mark. Martinicock Point, a mile or more west of Peacock's, must have washed away rapidly. A long point of boulders and blocks stretches far out into the Sound at ebb tide. This was once an island, which is also connected with Peacock's by a long sand-beach. Another ancient island, now connected with Long Island on the S. W. by a beach, is very near Martinicock on the W. These two islands and beaches enclose a large pond, the inlet of which is through a mill-sluice between them. Mr. Jacob Latting, who is an old and respectable inhabitant, and has been a resident in the vicinity more than half a century, informed me that these have been worn away many rods within his recollection. Mr. Latting pointed out to me the position of the beach between Peacock's and Fox Island, during the revolution. The beach then dammed up the outlet of a marsh, through which a small stream ran, and a trunk was put in the beach in 1778, to allow the water to drain through, in order to prevent flooding the meadows. I saw the trunk in its original position. The beach has since made out about two hundred yards in front of where it was at that time. He observed that these beaches are subject to considerable variations by storms, the materials being tumbled along either eastward or westward, according to the direction of the wind.

Sands' Point, on which a lighthouse has been long built, was washing away so rapidly some years since, that it became necessary to protect it by building a strong sea-wall along the shore. A reef of rocks, (the remains of ancient lands,) extends out some distance from the shore. The wall has afforded a protection against the encroachments of the sea, and about an acre of land has been added to that belonging to the United States, in consequence of the alluvial action of the surf depositing the sand and shingle in the eddy on the south side of the point. Mr. Mason, the keeper of the lighthouse, communicated these facts, and many others of much interest. The broad and extensive sand-beach south of Sands' Point, a mile or more in length, was, since his remembrance, a salt marsh covered with grass. Mr. Mason is nearly eighty years of age. The materials swept from Sands' Point and deposited on the edge of the marsh, have been drifted and washed over its surface.

At and near Kidd's Rock three-quarters of a mile eastward of Sands' Point, the wasting of the cliffs from the effects of the waves is very evident. The cliffs present mural escarpments toward the Sound, but the hills slope down gradually on the other side toward the salt marsh. This elevated land was formerly an island, but alluvial causes have formed a salt marsh where the water was sheltered from the sea. The wasting of the cliffs has caused the formation of long beaches; one connecting Kidd's Point with Sands' Point, and the other connecting with the high grounds S. E. of the marsh on the W. side of Hempstead harbor. A small inlet through the N. end of this beach allows the tide to communicate with the marsh. Boulders and blocks are seen imbedded in the strata forming the mural escarpments, and the shore below is also strewed with them. They also extend some distance from the coast, indicating that a considerable breadth of land has been washed away. The boulders protect the shore for a time, but the smaller ones and the shingle are gradually ground up by the action of the surf, and washed away, and during storms and high tides, fresh inroads are made. The beach between Kidd's Point and Sands' Point covers a part of the marsh, the ooze and marine peat of which, may be seen at the foot of the beach at ebb tide. This indicates that high land or else a beach was once farther seaward, to afford protection for the formation of that part of the marsh. Only a few acres of high land remain at Kidd's Point, and if it should continue to be washed away as heretofore, (and much expense would be necessary to prevent it) a century or two would be sufficient to effect its entire removal.

Kidd's rock, as it is called, is a remarkable erratic block which was imbedded in the loam of the tertiary formation. It has been undermined by the action of the sea, and has slid down to the shore and cracked in many large fragments. Viewing it from a little distance, one does not realize its magnitude, but by climbing over and wandering among its fragments at low water, it seems to grow upon the imagination. Its fragments probably weigh at least two thousand tons, and several sloop loads of it have been shipped to New York for building-stone. It is hornblendic gneiss, and some of its masses abound in epidote. It is a durable stone and will stand any exposure unchanged.

Several companies of diggers for Kidd's money have expended much time and labor at this place. Mr. Mason relates many amusing anecdotes relative to their mode of operating, and the ceremonies practised, some of which are sacrilegious. The superstitions connected with these gold hunters are a rarity of this enlightened age. I presume I speak within bounds when I remark, that in examining the geology of Long Island, I have seen many hundreds of excavations on the east side of the boulders and erratic blocks, where the gold-hunters have dug for this pirate's money.

The rock called Kidd's Rock, at Kidd's Point, three-quarters of a mile eastward of Sands' Point, is not the same that was known by that name a century ago. Mr. Mason informed me that Kidd's Rock was formerly the extremity of the Point, but was long ago undermined by the waves. He remembers having seen it as an isolated rock, some distance from the shore, but it has long since disappeared, and the rock on the present point is called by that name. Had the money-diggers been aware of this fact, it might have spared them the labor of searching here. In some parts of Long Island almost every boulder and block has had an excavation made by its side.

Barker's and Hewlet's points have also been worn away by the action of the sea; but the Sound is here so narrow, that the destructive agency of the waves is not so great as at the localities beforementioned.

Many other localities, where the same effects are in progress, on the west and southwest parts of Long Island, might be mentioned; but they are less marked in their effects, because they are not so much exposed to the fury of the surf from broad sheets of water.

Coney Island, which is mostly alluvial, is rapidly washing away on its south side, where it is exposed to the full force of the ocean swell. A new direction given to the tidal currents by some recently formed bar, is probably the cause. Mr. John Wyckoff, who lives near the Ocean-house, remarked that the sandy part of the island was a mile broad not many years ago, though now it is not more than half that breadth.* He informed me that every storm made a sensible difference, and that some years ago the sand-hills south of the Ocean-house were covered with small pines and bushes, and that in a single night, during a violent storm, the trees and bushes, and much of the earth, were washed away.

The high grounds near the two lighthouses on Staten Island are wearing away by the action of the waves, and the materials are mostly deposited on the adjacent beaches, which extend for a considerable distance west of Fort Tompkins, and east and west of the southwest light-house. The high bank near Brown's point, on Staten Island, is also washing away. Here a bank of shells about two feet thick is exposed, within eight or ten inches of the natural surface of the ground. They appear to be recent shells deposited there, not by nature, but by the hands of the aborigines of the country.

N. Y. Geological Reports.

* At low water, traces of the ancient salt marsh can be seen, about one mile east of Mr. Wyckoff's, on the edge of the beach. This is conclusive evidence that this part of the island is washing away, if verbal evidence from observing individuals long resident on the spot was not deemed sufficient.

A BOTTOMLESS LAKE IN SUSSEX COUNTY.

A WRITER in the Troy Morning Mail gives the following notice of a remarkable pond in Sussex county in New Jersey:—

"White Lake is situated about one mile west of the Paulis Kill, in the town of Stillwater. It is nearly circular, and about one-third of a mile in diameter. It has no visible inlet, but its outlet is a never-failing stream of considerable magnitude. The name is derived from its appearance. Viewed from a little distance, it seems of a milky whiteness, except a few rods in the centre, which, by the contrast, appears perfectly black. The appearance itself is singular enough, but the cause is still more remarkable.

"From the centre or dark portion of the lake at stated seasons, innumerable quantities of shells are thrown up, of various sizes and forms, but all perfectly white. These float to the shore, and are thrown out upon the beach, or sink into shallow water. Hundreds of bushels might be gathered from the shore after one of these periodical uprisings; and the whole soil, for several rods on every side of the lake, is composed entirely of these shells, broken or decomposed by the action of the weather. In the centre of the lake, bottom has never been found, although it has been sounded to the depth of several hundred feet.

"Where, then, is the grand deposite from which has been welling up, since the memory of man, these countless myriads of untenanted shells? is it possible, that though far remote, and at an elevation of several hundred feet above them this bottomless well, may, by some subterranean communication, be connected with the grand shell marl deposite in the eastern part of the state?"

Do not sigh for this world's goods, nor lament thy poverty. Out of the meanest hovel thou canst get a sight of heaven.

Lime-Grinding Machine.

EGYPTIAN BUILDINGS.

The edifices of the modern Egyptians, particularly those erected for common domestic use, are widely different from those of the ancient inhabitants of that country, both in the material of which they are constructed and their form. The ancients usually made their dwellings, as well as their temples and palaces, of stone, and solidity was the characteristic feature of all; but the modern Egyptians, like other people of the east living within the tropics, seem to have only present comfort and utility in view, and erect dwellings of light and perishable materials. To this rule, however, there are many exceptions, and their cities and suburban villages contain many fine specimens of durable masonry in their dwellings.

Mortar is extensively used, not only as a cement for the stones of the walls, but also for covering the roofs and the verandahs in front of the houses. The composition of the mortar is peculiar. The most common in the east is made of a simple mixture of clay and straw, much after the manner of the sun-dried bricks of the ancients. The straw is chopped fine, such as they feed to their cattle, and serves a similar purpose as the hair used by our plasterers, though not so efficient. The plaster or mortar thus prepared, requires long continued mixing or beating, to make it good. This kind is generally used for interior walls, or places not exposed to rain, for the action of water upon it soon destroys it.

Lime is pretty extensively used for the mortar intended as an external covering to the walls exposed to rain; and in the proper tempering of the mortar when this material is introduced, the Egyptians take great pains. The lime is mixed with the clay and straw, in proportions suitable to the various uses to which the mortar may be appropriated, and the whole mass is then submitted to the action of a roller moved by cattle, much after the manner in which our brick-makers prepare their clay. When such a machine is not used, the mortar is subjected to a long continued beating with sticks. This operation is a tedious one, and requires great patience for its perfect performance.

The Egyptians frequently make a kind of mortar for the roofs of their houses, of clay, straw, lime and ashes. This, when properly mixed and tempered, will effectually withstand the action of the water during their long rainy seasons, if prepared a sufficient length of time previous, for the heat of the sun to indurate them. The tempering operation of this kind of plaster, and the manner of its application, is shewn in our second illustration. The first engraving represents a lime-grinding mill at Cairo, which is used more particularly for making pure lime mortar, though it is the same in form and manner of use, as the common ones for tempering the compound mortar.

In the tempering operations of the present Egyptians, when preparing their mortar, we discern a feature of the art of masonry as it anciently existed, and perceive that the value of thus preparing the plaster to resist water, has been

Egyptian Plasterers at work.

appreciated for ages. In the thirteenth chapter of Ezekiel we find the following remarks in reference to it: "And one built up a wall and lo! others daubed it with untempered mortar. Say unto them which daub it with untempered mortar, that it shall fall: there shall be an overflowing shower, &c.," and in several succeeding verses, the prophet speaks of the insufficiency of walls covered with untempered mortar, to withstand the rain.

[Original.]

THOUGHTS ABOUT TEARS.

BY J. L. CHESTER.

Decidedly the queerest topic that was ever selected for the lucubrations of a thinking being, is it not, gentle reader? Is it not barren, and entirely devoid of interest? It might be, I confess, to those who are accustomed to look upon a tear simply as a globule of pearly fluid. Yet, even then, I think that it would be difficult for many—for most—to understand its physical formation and trace its anatomical properties. How it was possible for this pure, transparent, and yet briny liquid to collect and secrete itself in the human system, for a long time puzzled the brains of the early Æsculapians, and, to this day, the wits of the younger initiates are put to the task in solving the mystery. A tear, a simple, solitary tear, regarded only in its physical character, is an object on which the study of years may be lavished. But, when we come to regard it as connected, by some mysterious union, with the thoughts and intents of the heart, a boundless field of inquiry and philosophical speculation is opened upon the view.

I believe that until the present time this view of the subject has been entirely overlooked. Be it my task to offer some thoughts about tears. Throwing aside their physical nature, we will examine their mental; or, rather, throwing aside their material, we will examine their spiritual nature.

In the first place, tears may be divided into two general classes, viz:—tears of pleasure and tears of pain—of joy and sorrow—or, of happiness and its opposite. The tears of hope, of pleasure, of passion, of gratitude, in fact of all species, may be placed in one of these two general classes.

We often see tears coursing down cheeks that are wreathed by smiles, like the gentle April shower, that comes down in the midst of sunshine. Surely, when joy sits smiling on the brow there cannot be unhappiness, though tears may dim the lustre of the eyes beneath. That beautiful female—a gentle sister, perhaps, overjoyed at the return of her fondly loved brother, who has long lingered from the glance of her eye and the sound of her voice—seeks and finds relief to her overburdened heart in a flow of tears. As she clasps the companion of her childhood and

the brother of her youth to her beating heart she can feel naught of unhappiness, and yet she weeps—weeps for *joy*.

That orphan boy, who, from some humble and obscure station in life, has been placed in a position where comfort and luxury even are at his command, as he grasps the hand of his benefactor, vainly attempts to express his thanks—his heart rises and choaks his utterance and tears, warm tears, fall upon the hand that he presses. They are tears of *gratitude*.

That young man, who has struggled long amid the peltings of a pitiless world, and has buffeted so nobly the waves of adversity and misfortune, is, at length, about to sink beneath the billows; but, as his eye catches the faint glimpse of a cheering light before him, one bright tear drops in his path, and, stretching out a stronger arm and nerving himself with fresh courage, he divides the surge before him and enters a haven of peaceful waters. That was the tear of *hope*.

That father, as he gazes on the bud and blossom of his first and only child, marking the developements of a disposition that is lovely, and tracing the future progress and maturity of his mental and physical character, cannot repress the tear that rises to his eye. Though his heart swells and his bosom heaves—not with sorrow or danger—the tear, the tear of *pride* will fall.

That lonely female—that young widow, clad in the habiliments of wo, weeps for the loss of the one who was as dear to her as her own life. The spirit of sorrow hath nestled within her bosom, and grief hath made her heart its abode. The mourning robe that encircles her form is not as dismal as the drapery that hath been hung around her soul. Approach her not! her thoughts are hallowed—they are with the dead! But gaze upon those "big, round drops" that are stealing successively down her pallid face. They are tears of *sorrow*—of grief—the overflowings of the waters of desolation.

That man, whose face is distorted with passion, and whose lips speak naught but threats and imprecations, also weeps. They are tears of *anger*, we will pass them by.

There is a room in which a suffering fellow is writhing in agony upon his couch. Friends are about him, endeavoring to soothe his last moments. Strangers are there also, gazing with no personal interest upon the scene and yet they weep. Here a maiden is listening to the pitiful tale of a starving mother and her orphan children, and she weeps. There one hears the story of unexpected good fortune to his friend, and he weeps. These are tears of *sympathy*.

That child on the approach of the thunderstorm, when it hears the rattling of the dreadful thunder and sees the lightning darting through the sky, buries its little face in its mother's lap and weeps tears of *fear*.

That stubborn boy, who has offended his parent and wilfully persists in his obstinacy, at length yields to parental authority, and, overcome by mildness, sinks at his father's feet and asks forgiveness amid his tears.

But the tear most lovely, most beautiful to the sight and most touching to the heart, is that which falls from the eye of one whose heart has been subdued by more than mortal power, and who drops the glittering gem on the shrine of a Saviour's love. More lovely, more valuable than all the rest, for the white-robed host in heaven are gazing upon it, and a delegate from thence bears it up to the throne of the Almighty. It is the tear of *repentance*.

All tears are the result of an overburdened heart. Let the weight that sits oppressively upon the spirit be that of joy or sorrow, gratitude or sympathy, hope or pride, anger or repentance, it must accumulate to such a degree that it can be no longer borne, ere the tear will start. Herein consists that intimate and mysterious union. Tears will not flow upon an ordinary occasion. The heart must be full—like the reservoir from which, until filled, no waters will pass, though the flood-gate be open. Joy, sorrow, gratitude, sympathy, hope, pride, anger, repentance, and fear must be unfeigned and infinite, else tears will not flow. And then, how infinite, how sweet the relief! A weighty and oppressive load has been removed from the spirit and it is again buoyant as air. I know of no sensation more delightful than that immediately succeeding a burst of tears.

Tears are evidences of deep feeling. Mind, body, and soul must all be concentred upon one idea, and there must be an absorbing intensity of feeling, in order to produce tears. In the midst of conflicting passions, the eye is dry: if fear and hope are striving for the mastery, until one hath overcome the other the eye will be tearless. There must be knowledge neither of surrounding nor attendant circumstances: every other emotion of the heart must be for the time silenced, and the whole soul bound up in the one absorbing idea. If grief sits heavily on the shrinking heart, and tears flow in consequence, if the star of hope sheds one flickering ray across the dark landscape, the brilliant rainbow appears on the horizon and the tears are dried. This is a singular fact. If two passions are present in

the heart, its possessor may wait in vain for the relief afforded by a flow of tears: one counteracts the other—like two men at the flood-gate of the reservoir: if their strength be equalized, they may press against each other for ever and produce no effect; but, if one gives way, the gate is opened and the waters flow out at once. So with tears.

Tears never result from bodily sensation. But how will this agree with the fact that children frequently weep on account of bodily pain? Perfectly: the nerves of the wounded part carry their pitiful tale directly to the brain, which is the seat of all sensation both animal and mental. It is not the injury itself that causes the child to weep, but the knowledge of injury received. Did the child not know that it was hurt, it certainly would not weep. This knowledge, this painful sensation upon the brain, goes at once to the heart, the powers and emotions of which are, for the time, all absorbed in the contemplation of the injury—and thus tears are produced.

Tears are the weapons of the weak. We may hardly find a writer of poetry or romance, who does not extricate his heroine, or his weaker heroes, from some desperate and dangerous situation, by the intervention of a flow of tears. "She wept!" How many ten thousand times we have read this passage, as we have turned over the pages of ancient and modern authors. Tears are made the universal remedy against oppression. They are rightly so made. He must be a brute indeed—something more or less than human—who can gaze unmoved on a flow of tears. The hearts of ferocious robbers are often touched, and the bloody assassin drops his dagger as the tear glistens in the eye of his trembling victim. But, in most cases of danger, two passions are conflicting, and we find the idea of weeping the farthest from our mind. Yet are tears the weapons of the weak, and but seldom are they unsuccessful. Sometimes the luckless urchin, who is trembling beneath "the birchen rod," finds that the tears which he sheds in order to soften the flinty heart of the "schoolmaster" are unavailing.

A woman's tears are often despised. The habit of crying, as it is termed, is considered as one of her weaknesses. They are not *men* who so express themselves. I consider every tear that a sensitive and virtuous woman sheds as a gem of no mean value. Tears are evidences of deep feeling, and the tears of an affectionate wife should only tend to bind her closer to the heart of her husband. The fountain of tears is the thermometer of the heart: feeling is the mercury, and tears its representatives. Shun that woman who never weeps: it is an evidence that the mercury is below the freezing point, and that her heart is as frigid as an icicle. But cherish her, the lustre of whose eyes is often dimmed by tears, and start when you see them coursing down her cheeks, for fear that your harshness and brutality have produced them.

"It is not manly to weep." This is not the assertion of a *man*. Unfortunately for those of my sex, they are usually the victims of passions too stern and austere. The tears of those who can weep do not result from the want of manliness: on the contrary, they are the evidences of feelings and emotions that spread a gentleness over and dignify the whole of the masculine character. It is my pride that I may weep, and, if it be a degradation, a letting down of my dignity, I cheerfully submit to it.

We weep in all stages of our existence: in infancy, childhood, youth, manhood and old age. Methinks it would be a good idea for a naturalist to collect the tears of these several stages, and by analyzation discover their separate and relative qualities. I fancy that the tear of infancy would be lighter and purer than that of old age, which comes from the bottom of the fountain, and with which must be mingled the precipitate of time.

We weep on all occasions: of joy, grief, hope, fear, anger, and repentance, in sickness and in health, at births and at deaths, at weddings and at funerals. No occasion is too trivial—none too sacred. Suppose that all the tears which have been shed since the commencement of the world could have been received into one reservoir, what must have been its dimensions? Methinks it would puzzle the ablest mathematician to answer.

Weep, maiden! the excess of your joy must be removed, and it is better that it be done by tears than by hysterical ecstacies. Weep, child of fear! tears will darken your vision, that you may not perceive the danger before you. Weep, humble repentant! your errors shall be washed away by your tears. Weep, victim of passion! well would it be if all were accustomed to await the flow of tears ere the angry word is spoken. Weep, votary of hope! your tear will be like oil upon the troubled waters, and the waves of adversity and misfortune shall be stilled. Weep, mourner, weep! let your grief melt away in tears. You have a noble precedent—the Saviour of mankind dropped a tear on the grave of his friend!

New York, 1840.

JOHN KNOX.

John Knox, the chief promoter of the reformation in Scotland, was descended from an ancient family, and born at Gifford, in East Lothian, in 1505. He received his education at the university of St. Andrews, where he took the degree of master of arts much before the usual age. Having embraced the ecclesiastical profession, he began, as usual, with the study of scholastic divinity, in which he so much distinguished himself, that he was admitted into priest's orders before the time appointed by the canons. He soon became weary of the theology of the schools, and resolved to apply himself to that which was more plain and practical. This alteration of opinion led him to attend the sermons of Thomas Guillaume, or Williams, a friar of eminence, who was so bold as to preach against the pope's authority; and he was still more impressed by the instructions of the celebrated George Wishart, so that he relinquished all thoughts of officiating in the church of Rome, and became tutor to the sons of the lairds of Long Niddrie and Ormistoun, who had embraced the reformed doctrines. Here he preached, not only to his pupils, but to the people of the neighborhood, until interrupted by cardinal Beaton, archbishop of St. Andrews, who obliged him to conceal himself; and he thought of retiring to Germany. The persuasion of the fathers of his pupils, and the assassination of Beaten by the Leslies, encouraged him to remain. He took shelter, under the protection of the latter, in the castle of St. Andrews, where, notwithstanding the opposition of the clergy of St. Andrews, he preached the principles of the reformation with extraordinary boldness, until the castle of St. Andrews surrendered to the French in July, 1547, when he was carried with the garrison into France, and remained a prisoner on board the galleys until the latter end of 1549. Being then set at liberty, he passed over to England, and, arriving in London, was licensed either by Cranmer, or the protector Somerset, and appointed preacher, first at Berwick, and afterward at Newcastle. In 1552, he was appointed chaplain to Edward VI. and preached before the king, at Westminster, who recommended Cranmer to give him the living of All-hollows, in London, which Knox declined, not choosing to conform to the English liturgy. It is said that he refused a bishopric, regarding all prelacy as savoring of the kingdom of antichrist. He, however, continued his practice as an itinerary preacher, until the accession of Mary, in 1554, when he quitted England, and sought refuge at Geneva, where he had not long resided before he was invited, by the English congregation of refugees at Frankfort, to become their minister. He unwillingly accepted this invitation, at the request of John Calvin, and continued his services until embroiled in a dispute with doctor Cox, afterward bishop of Ely, who strenuously contended for the liturgy of king Edward. Knox, in his usual style of bold vituperation, having, in a treatise published in England, called the emperor of Germany as great an enemy to Christ as Nero, his opponents accused him to the senate of treason, both against the emperor and Queen Mary; on which he received private notice of his danger, and again retired to Geneva, whence, after a residence of a few months, he ventured in 1555, to pay a visit to his native country. Finding the professors of the Protestant religion greatly increased in number, and formed into a society under the inspection of regular teachers, he finally joined them, and produced so great an effect by his exertions, both in Edinburgh and other places, that the Roman Catholic clergy, alarmed at his progress, summoned him to appear before them in the church of the Blackfriars, in that metropolis, May, 15, 1556. This summons he purposed to obey, resting on the support of a formidable party of nobles and gentry, which so alarmed his opponents, that they dropped the prosecution. Thus encouraged, he continued preaching with additional energy and boldness, and was even induced to write to the queen regent, Mary of Lorraine, a letter, in which he earnestly exhorted her to listen to the Protestant doctrines. While thus occupied, he was strongly urged to pay a visit to the English congregation at Geneva; and he accordingly departed for that place in July, 1556. He was no sooner gone, than the bishops summoned him to appear before them; and, as that was impossible, they passed sentence of death against him as a heretic, and burnt him in effigy at the cross at Edinburgh. Against the sentence he drew up an energetic appeal, which was printed at Geneva, in 1558, previously to which he was invited to return to Scotland, and had actually reached Dieppe on his way, when he received other letters recommending delay; which epistles he answered by such strong remonstrances against timidity and backsliding, that those to whom he addressed them entered into a solemn bond or covenant, dated December 3, 1557, "that they would follow forth their purpose, and commit themselves, and whatever God had given them, into his hands, rather than suffer idolatry to reign, and the subjects to be defrauded of the only food of their souls." Knox, in the mean time, had returned to Geneva, where he published his treatise entitled the First Blast of the Trumpet against the monstrous Regimen of Women, chiefly aimed at the cruel government of queen Mary of England, and at the attempt of the queen-regent of Scotland to rule without a parliament. A Second Blast was to have followed; but the accession of queen Elizabeth to the throne of England, who was expected to be friendly to the Protestant cause, prevented it. In April, 1559, he would have visited England, but was prevented by the resentment felt by Elizabeth at his late treatise. He therefore proceeded directly to Scotland, where he found a persecution of the Protestants just ready to commence at Stirling. He hurried to the scene of action to share the danger, and, mounting a pulpit, inflamed the people by a vehement harangue against idolatry. The indiscretion of a priest, who, immediately on the conclusion of this discourse, was preparing to celebrate mass, precipitated his hearers into a general attack on the churches of the city, in which the altars were overturned, the pictures destroyed, the images broken, and the monas-

Monument of John Knox, at Glasgow, Scotland.

teries almost levelled to the ground. These proceedings were censured by the reformed preachers, and by the leaders of the party. From this time, Knox continued to promote the reformation by every means in his power, and, by his correspondence with the secretary Cecil, was chiefly instrumental in establishing the negotiation between the congregation and the English, which terminated in the march of an English army into Scotland. Being joined by almost all the chief men of the country, these forces soon obliged the French troops, who had been the principal support of the regent, to quit the kingdom; and the parliament was restored to its former independence. Of that body, the majority had embraced Protestant opinions, and no opportunity was omitted of assailing the ancient religion, until at length the Presbyterian plan, recommended by Knox and his brethren, was finally sanctioned, the old ecclesiastical courts being abolished and the exercise of religious worship, according to the rites of the Roman church, prohibited. In August, 1561, the unfortunate Mary, then widow of Francis II. king of France, arrived in Scotland to reign in her own right. She immediately set up a mass in the royal chapel, which being much frequented, excited the zeal of Knox, who was equally intolerant with the leaders of the conquered party; and, in the face of an order of privy council, allowing the private mass, he openly declared from the pulpit, "that one mass was more frightful to him than 10,000 armed enemies, landed in any part of the realm." This freedom gave great offence, and the queen had long and angry conferences with him on that and other occasions, in which he never paid the slightest homage either to sex or rank. He preached with equal openness against the marriage of Mary with a papist; and Darnley, after his union, being induced to hear him, he observed, in the course of his sermon, that "God set over them, for their offences and ingratitude, boys and women." In the year 1567, he preached a sermon at the coronation of James VII when Mary had been dethroned, and Murray appointed regent. In 1572, he was greatly offended with a convention of ministers at Leith, for permitting the titles of *archbishop* and *bishop* to remain during the king's minority, although he approved of the regulations adopted in reference

to their elections. At this time his constitution was quite broken, and he received an additional shock by the news of the massacre of St. Bartholomew. He had, however, strength enough to preach against it, which he desired the French ambassador might be acquainted with, but soon after took to his bed, and died, November 24, 1572. He was interred at Edinburgh, several lords attending, and particularly the earl of Morton, that day chosen regent, who, when he was laid in his grave, exclaimed, "There lies he who never feared the face of man, who hath been often threatened with dag and dagger, but yet hath ended his days in peace and honor; for he had God's providence watching over him in an especial manner when his life was sought." The character of this eminent reformer has been sketched by Dr. Robertson, in his History of Scotland, who, in observing upon the severity of his deportment, impetuosity of temper, and zealous intolerance, observes, that the qualities which now render him less amiable, fitted him to advance the reformation among a fierce people, and enabled him to encounter dangers, and surmount opposition, to which a more gentle spirit would have yielded. John Knox was a man of exalted principles, great intellectual energy, undaunted intrepidity, and exemplary piety and morality. He was twice married, and had two sons by his first wife. Encyc. Americana

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OBSERVATIONS ON MUSIC.

THERE are few who have not felt the charms of music, and acknowledged its expressions to be intelligible to the heart. It is the language of delightful sensations, which is far more eloquent than that of words; it breathes into the ear the clearest intimations; but how it was learned, to what origin we owe it, or what is the definite meaning to be affixed to some of its most affecting strains, we know not.

We plainly feel that music gently touches and agitates the agreeable and sublime passions; that it wraps us in melancholy and elevates us with joy; that it dissolves and inflames; that it melts us in tenderness and rouses to rage; but its strokes are so fine and delicate, that, as in a tragedy, even the passions that wound, please. Its sorrows are charming, and its rage heroic and delightful; as people feel the particular passions with different degrees of force, their taste for harmony must proportionably vary. Music then is a language directed to the passions; but the rudest of these put on a new nature, and become pleasing in harmony: let me also add, that it awakens some passions which we do not perceive in ordinary life. The most elevated sensation of music arises from a confused perception of ideal or visionary beauty and rapture, which is sufficiently distinguishable to fire the imagination, but not clear enough to become an object of knowledge. This shadowy beauty the mind attempts, with a languishing curiosity, to collect into a distinct object of view and comprehension; but it fades and escapes, like the dissolving ideas of a delightful dream, that are neither within the reach of memory, nor yet totally fled. The noblest charms of music, then, though real and affecting, seem too confused and fluid to be collected into a distinct idea. Melody is always understood by the crowd, but almost always mistaken by musicians, who are, with hardly an exception, servile followers of the taste of the day; who, having expended much time and pains on the mere mechanical and practical part, are induced to lay too great a stress on those dexterities of hand, which have no real value, except as they serve to produce sounds, or collections of sound, which move the passions. The present taste for music bears a striking resemblance to the rage for tragi-comedy, which about a century ago gained so much ground upon the stage. The musicians of the present day are charmed at the strange union they form between the grave and the fantastic, and at the surprising transitions they make to the wildest extremes; while every hearer who has the least remainder of the taste of nature left, must be shocked at the strange jargon. If the same taste prevailed in painting, we should soon find the monster of Horace realized on canvass; we should see the woman's head, the horse's body, and the fish's tail united by soft graduations, and set off in the most imposing manner. Musicians should take particular care to preserve in its full vigor and sensibility their original, natural taste, which alone can feel and discover the true beauty of music.

If Shakspeare, Milton, or Dryden, had been born with the same genius and inspiration for music as for poetry, and had passed through the practical part without corrupting the natural taste, or blending with it prepossession in favor of those sleights of hand and curious dexterities of which our musicians are so ambitious, then would their notes have been tuned to passions and to sentiments as natural and expressive as the tones and modulations of the voice in eloquent discourse. No great difference would be found between the music and the thought; the hearers would only think impetuously, and the effect of the music would be to impart to the ideas a tumultuous violence, and give a divine impulse to the mind. Any person conversant with the classic poets, sees instantly that the passionate power of the music I speak of was perfectly understood and practised by the ancients; that the muses of the Greeks always sung, and that their song was the echo of the subject which swelled their poetry into enthusiasm and rapture. It were devoutly to be wished that the Grecian taste for impassioned music could be once more restored to the delight and wonder of mankind. But as from the disposition of things, and the force of fashion, we can scarcely hope in our time to rescue the sacred lyre, and place it in the hands of men of genius—all that can be done is to try and reclaim musicians to their own natural feeling of harmony; to inculcate this important truth, that the genuine emotions of music are not to be found in compositions of a labored, fantastic, and surprising kind, but only in those pieces that are the growth of a native, pure and

unvitiated taste. Such emotions are discoverable in the pleasing sounds that wrap us in imaginary grandeur; in the plaintive notes that make us familiar with wo; in the tones that breathe the lover's sighs and agitate the breast with gentle pain; in those noble impressions that coil up the courage and fury of the soul, or that lull it in confused visions of joy: in a word, in those affecting strains that find their way to the inmost recesses of the heart—

"Untwisting all the chains that tie
The hidden soul of harmony."

FARMERS' DEPARTMENT.

ON PLANTING FOREST TREES FOR FENCING.

In many parts of the old settlements of this country, timber for fencing has become scarce and costly, as those farmers who have it to purchase for current use can testify. There are farms divided into small enclosures by cedar or chestnut rails, where the value of the fence bears a large proportion to the whole value of the property; and some years since my attention was called to a farm of about one hundred acres, which was fenced in an extraordinary manner with cedar, which on examination was found to have sold for less than the fence would have sold for separately. There is always more or less wood land on farms, but in most instances by cutting out, or from other causes, there are many *bald places* or *blanks*, which produce nothing of value either for the present, or expectation for the future; and on most farms there are spaces not adapted to cultivation, which remain *blank*, producing nothing. Now I desire to turn the attention of the readers of the Farmer's Cabinet to these blanks in their farms, if so be that they may be rendered profitable to themselves and those who may succeed them. Suppose a few quarts of chestnuts were deposited in proper situations in these blank places, an inch or two below the surface of the ground, at a proper season of the year, (which I should say would be at the time they were ripe in the autumn,) what do you think would be the result? Would they not grow up and become trees, and make rails or posts that would be worth ten or twelve cents a piece? Aye, that's what they would, and that without any further labor or attention on your part. I have often thought that if boys would plant some of their chestnuts instead of eating or selling them, they would gain more by it at the end. There are thousands of acres of land which have had all the marrow taken out of them by ignorant and conceited people—(I will not call them farmers, because they are a disgrace to the profession,) which it would be much better to plant with chestnuts or some other valuable description of trees, than to attempt to keep it under that species of wretched cultivation which will sooner or latter bring its occupant within the confines of the county poor-house.

In Scotland and other parts of Great Britain, but particularly the former, the business of planting forest trees has been prosecuted to a great extent for a long period of time, and the profits arising from it have been very great to the proprietors. The planting of course has been on grounds not adapted to profitable cultivation of grass or grain crops. Those who engage in this business either have nurseries where they bring forward the young trees, or purchase them at a low rate from nurserymen who cultivate them for sale to planters.

The value of the planted woods of Darnaway in Scotland in 1830, was £130,000 sterling (about $600,000.) The annual increase in growth of oak and fir, exceeds, in a threefold ratio, the amount of timber thinned or cut out every year; and as the system pursued is, for every fir that is cut down to plant two oaks, in the course of fifty years the whole forest of Darnaway will be one mass of oak. The total number of trees planted in this forest in forty-three years, was 12,187,550 viz.:—

Oak, - - - - - -	1,114,260
Scotch Fir, - - -	10,346,000
Ash, Elm, Beech, &c. -	728,290

Since the spring of 1829, there has been planted in it 911,000 oaks.

The above exhibits the planting of timber trees on a grand scale, and there are many others in Scotland that fall but little below it; and it is said to be attended with large and profitable annual returns, for the business of cutting out and replanting is constantly going on.

It is not expected, neither do our situation and circumstances require that we should, at least in the present generation, go to work and plant whole forests, but the destructive propensities of the people of this country have been such in regard to timber trees, that we are already beginning to feel the effects of our folly in the neighborhood of our houses, when obliged to buy materials for fencing, and the sooner we retrace our steps the better. I would therefore propose to make a commencement by planting chestnut or other valuable trees in vacant spaces in woodlands, or situations where profitable cultivation cannot be carried on. The expense will be small, and the profit, I suspect, will not fall below that derived from the raising of multicaulus trees.

IMPROVE THE SOIL.

The article which follows points out several methods of improving the soil. Every farmer knows very well the superior profit of a fertile soil in the production of crops that liberally repay him for his labor; but every one is not equally sensible of the various ways of enriching his lands, nor does he eagerly embrace every opportunity within his knowledge.

Farmers should awaken and look to the importance of this subject, embrace every chance within the reach of their means and information, to render their soil more fertile; and they will

soon find a permanent improvement, and it will give better crops with less labor, for a mellow fertile soil is the most easy to work. Many means of improving the soil are neglected for want of information, and when new plans are recommended they are adopted slowly, as many cannot confide in any practices that were not sanctioned by the usage of our forefathers.

"The golden rule in agriculture is to apply such manures and tillage as will make heavy land lighter, and light land heavier, cold land hotter, and hot land colder." He only is a farmer who knows and follows this rule.

Lands are seldom so rich but it may be a matter of gain to increase the fertility; and few tracts are so poor but that with proper tillage and manuring, they may be made the residence of plenty.

Manures are composed of all those substances which either directly or indirectly, supply plants with their requisite food, by means of which they are enabled to expand and come to maturity.

In the first place, the different earths will serve to manure each other. Thus, clay is a fertilizer of a light sandy soil, and sand is equally a fertilizer of clay. Where clay is applied to a sandy soil, it should be carted on in the fall, and spread evenly over the ground, that the frost may pulverize it before it is mixed with the soil in the spring.

The better these earths are mixed in the respective soils, the more sensible and immediate will be their effect: but their principal excellence is that they are calculated permanently to improve the soils to which they are applied. Stiff loams are also in the same way assisted by sand, and sand again by these; but neither in so great a degree as in the former case. Generally it may be observed that all light, dry soils are improved by being mixed with heavy earths, and *vice versa*.

Sand and fine gravel will greatly fertilize the soil of bog meadows, and this earth again is very good manure for all upland soils. It is peculiarly excellent for Indian Corn when applied to the hills, and is very good for flax, hemp, and most other summer crops. Like gypsum, it is friendly to the growth of white clover. When applied to upland grasses it should be laid on as a top dressing. Every kind of black mud from ponds and swamps, answers a somewhat similar purpose; though if the mud be stiff and clayey, it should only be applied to a light dry soil.

The different sorts of marl found in bog swamps are also excellent manures for all upland soils. These earths are usually found at the depth of from one to three feet from the surface, and are either of a white, gray, or brownish color. The former is the most efficacious, and the latter the least so, their strength being in proportion to the quantity of carbonate of lime they contain. It is best to mix these earths with the mass of black earth or bog dirt, that forms the upper stratum, in order to reduce their strength, and when thus mixed, a load of even the weakest kind is more efficacious than two of common barn dung.

Their operation as manures is similar to that of the Nova Scotia gypsum, have little or no effect when first applied to wheat and rye; but by afterward covering the ground with a thick growth of white clover, it is rendered fit for producing largely of these crops. The same may be observed of the bog dirt. Like this, these marls are peculiarly excellent for Indian corn, and all summer grain, and a less quantity is sufficient. They may be used as top-dressing or otherwise.

Ashes as a manure are found to be more efficacious in some parts of the country than in others, generally most so, when applied to lands near the ocean. In some parts where the soil is extremely light and the bottom sand, the farmer can afford to pay twelve and a half cents a bushel, while in other parts, they are suffered to lie untouched about the potasheries.

Ashes generally answer the most valuable purposes when applied to Indian corn, particularly where the soil is not suitable to this plant. Where the soil is wet, cold, loamy or clayey, the plants are apt to get stunted with the cold rains which usually fall after planting; and then the ashes serve to supply the natural deficiencies of the soil, till it becomes fertilized by the sun. But where the soil is natural to the growth of this plant, and there is no danger of its being stunted at its outset, perhaps it may be better to apply the ashes later, so that the plants may derive the greatest assistance from this manure, while the ears are setting and forming.

Ashes should generally be used for top-dressing; their salts lose nothing by exposure to the air, and soon find their way into the soil.

Soot is much more efficacious than ashes; beside salts, it contains oil. The soot of coal is esteemed equally as good as that of wood. It is used for top-dressings, and requires about forty bushels for an acre. When applied to winter grain it should be sown in the spring; and the same may be observed of ashes. Coal soot is particularly very good for meadow lands which have become sour and mossy. This manure, can, however, only be had in considerable quantities in large towns.

Of salts, which serve as manures, the principal are the common sea salt, sea water, saltpetre and alkaline salts. To the latter, the virtue of ashes, as a manure, is principally owing. Soapsuds is in part valuable on account of its alkaline salts, and perhaps the neutralized oil it contains add much to its value. It is usual to throw this manure away; but this is a needless waste. It may be taken in the watering-pot and strewed over the garden, where it will be of great service as a manure, and in expelling insects.

Yankee Farmer.

APHORISMS.

No one can change his mind to the injury of another.

Thou shalt govern many, if reason govern thee.

A poor freedom is better than a rich slavery.

Regard no man's opinion of what he does not understand.

Avoid a slanderer as you would a scorpion.

Never pretend to tell what you do not know.

Trust not a profane person.

AMERICAN SCENERY.

THE OHIO.

It was in the month of October. The autumnal teints already decorated the shores of that queen of rivers, the Ohio. Every tree was hung with long and flowing festoons of different species of vines, many loaded with clustered fruits of varied brilliancy, their rich bronzed carmine, mingling beautifully with the yellow foliage, which now predominated over the yet green leaves, reflecting more lively teints from the clear stream than ever landscape painter portrayed or poet imagined.

The days were yet warm. The sun had assumed the rich and glowing hue which at that season produces the singular phenomenon called there the "Indian summer." The moon had rather passed the meridian of her grandeur. We glided down the river, meeting no other ripple of the water than that formed by the propulsion of our boat. Leisurely we moved along, gazing all day on the grandeur and beauty of the wild scenery around us.

Now and then a large cat-fish rose to the surface of the water in pursuit of a shoal of fry, which, starting simultaneously from the liquid element, like so many silvery arrows, produced a shower of light, while the pursuer with open jaws seized the stragglers, and with a shake of his tail, disappeared from our view. Other fishes we heard uttering beneath our bark a rumbling noise, the strange sounds of which we discovered to proceed from the white perch, for, on casting our net from the bow, we caught several of that species, when the noise ceased for a time.

Nature, in her varied arrangements, seems to have felt a partiality towards this portion of our country. As the traveller ascends or descends the Ohio, he cannot help remarking that alternately, nearly the whole length of the river, the margin on one side is bounded by lofty hills and a rolling surface, while on the other, extensive plains of the richest alluvial land are seen as far as the eye can command the view. Islands of varied size and form rise here and there from the bosom of the water, and the winding course of the stream frequently brings you to places where the idea of being on a river of great length changes to that of floating on a lake of moderate extent. Some of these islands are of considerable size and value—while others, small and insignificant, seem as if intended for contrast; and as serving to enhance the general interest of the scenery. These little Islands are frequently overflowed during great freshets or floods, and receive at their heads prodigious heaps of drifted timber. We foresaw with great concern the alterations that cultivation would soon produce along those delightful banks.

As night came, sinking in darkness the broader portions of the river, our minds became affected by strong emotions, and wandered far beyond the present moments. The tinkling of bells told us that the cattle which bore them were gently roving from valley to valley, in search of food, or returning to their distant homes. The hooting of the great owl, or the muffled noise of its wings as it sailed smoothly over the stream, were matters of interest to us; so was the sound of the boatman's horn, as it came winding more and more softly from afar. When daylight returned, many songsters burst forth, with echoing notes, more and more mellow to the listening ear. Here and there the lonely cabin of a squatter struck the eye, giving note of commencing civilization. The crossing of the stream by a deer, foretold how soon the hills would be covered with snow.

Many sluggish flat-boats we overtook and passed—some laden with produce from the different head waters of the small rivers that pour their tributary streams into the Ohio; others, of less dimensions, crowded with emigrants from distant parts, in search of a new home. Purer pleasures I have never felt; nor have you, reader, I ween, unless indeed you have felt the like, and in such company.

The margins of the shores and of the river were at this season amply supplied with game. A wild turkey, a grouse, or a blue winged teal, could be procured in a few moments; and we fared well, for whenever we pleased we landed, struck up a fire, and provided as we were with the necessary utensils, procured a good repast.

When I think of these times, and call back to my mind the grandeur and beauty of those almost uninhabited shores; when I picture to myself the dense and lofty summits of the forest, that every where spread along the hills, and overhung the margins of the stream, unmolested by the axe of the settler; when I know how dearly purchased the safe navigation of that river has been by the blood of many worthy Virginians; when I see that no longer any aborigines are to be found there; and that the vast herd of elks, deer and buffaloes, which once pastured on these hills and in these valleys, making for themselves great roads to the several salt springs, have ceased to exist; when I reflect that all this grand portion of our Union, instead of being in a state of nature, is now more or less covered with villages, farms and towns, where the din of hammers and machinery is constantly heard; that the woods are fast disappearing under the axe by day, and the fire by night; that hundreds of steamboats are gliding to and fro, over the whole length of the majestic river, and forcing commerce to take root and to prosper at every spot; when I see the surplus population of Europe coming to assist in the destruction of the forest, and transplanting civilization into its darkest recesses—when I remember that these extraordinary changes have all taken place within the short period of twenty years, I pause, and wonder, although I know all to be fact, I can scarcely believe its reality.

Whether these changes are for the best or for the worse, I shall not pretend to say; but in whatever way my conclusions may incline, I feel with great regret that there are on record no satisfactory accounts of the state of that portion of the country, from the time when our people first settled in it. This has not been because no one in America is able to accomplish such an undertaking. Our Irvings and our Coopers have proved themselves fully competent for the task

It has more probably been because the changes have succeeded each other with such rapidity, as almost to rival the movements of their pen. However, it is not too late yet; and I sincerely hope that either or both of them will ere long furnish the generations to come with those delightful descriptions which they are so well qualified to give, of the original state of a country that has been so rapidly forced to change her form and attire, under the influence of increasing population. Yes; I hope to read, ere I close my earthly career, accounts from those delightful waters of the progress of civilization in our western country. They will speak of the Clarks, the Croghans, the Boones, and other men of great enterprise. They will analyze, as it were, each component part, and the country as it once existed, and will render the picture as it ought to be, immortal. Audobon.

STATISTICS.

From among a great many valuable statistics contained in a neatly printed and well arranged pamphlet, compiled by Mr. W. H. Hadley, we have culled the following:—

United States Army.

According to official reports, the United States army in January, 1840, amounted to twelve thousand five hundred and fifty seven men. Its general organization is:—a General staff, Medical department, Pay department, Purchasing department, Corps of Engineers, Corps of Topographical Engineers, Ordnance department, two regiments of Dragoons, four regiments of Artillery, eight regiments of Infantry.

The principal officers are:—one Major-General, two Brigadier-Generals, one Adjutant-General, seventeen Colonels, eighteen Lieutenant-Colonels, twenty-six Majors, one hundred and seventy-two Captains, two hundred and eight first Lieutenants. Total number of non-commissioned officers, musicians and privates, is eleven thousand eight hundred and four.

The total number of militia in the United States, is about one million, four hundred thousand. The militia comprises all able-bodied white males from eighteen to forty-five years old; and when called into actual service, they receive the same pay as the regular army.

United States Navy.

The Navy of the United States contains the following officers:—fifty-five Captains of the higher grade, fifty-five Commanders, two hundred and ninety Lieutenants, sixty-one Surgeons, seventeen passed Assistant Surgeons, fifty-three Assistant surgeons, fifty-one Pursers, thirteen chaplains, one hundred and ninety-one passed Midshipmen, two hundred and thirty-one Midshipmen, twenty-nine Masters, seventeen Professors of Mathematics and teachers of naval schools, thirty-two boatswains, thirty-seven gunners, twenty-four carpenters, and twenty-five sailmakers.

The Marine corps consists of one colonel-commandant, one Lieutenant-colonel, four Majors, thirteen Captains, twenty first Lieutenants, twenty second Lieutenants.

There are in the navy, finished and in progress, eleven ships of the line, three of which carry seventy-four guns each; seven, eighty guns, and one (Pennsylvania) one hundred and twenty guns. There are fourteen first class frigates, forty-four guns each; two second class frigates, each twenty-six guns; one Razee, fifty-four guns; twenty-one sloops of war, twelve carrying twenty guns each, two eighteen guns, and six sixteen guns; four brigs, ten guns each; eight schooners, four carrying ten guns, one four guns, the remainder, number unknown; seven steam ships.

Commissioned officers of the navy are divided into the following ranks and denominations:—Commodores commanding squadrons; Captains commanding frigates and vessels of twenty guns; Masters-commandant, commanding sloops, Lieutenant-commanders rank with Brigadier-generals; Masters-commandant rank with Majors; and Lieutenants in the navy, rank with Captains in the army.

Railroads and Canals.

There are in the United States, sixty-five railroads, traversing a distance of four thousand five hundred and twenty-three miles. There are forty-two canals traversing a distance of three thousand four hundred and sixty-eight miles. This includes the number of railroads and canals finished and in progress.

Indian Warriors.

The estimated number of Indian warriors belonging to tribes removed by government west of Missouri and Arkansas, is sixteen thousand three hundred and ten. The number of warriors belonging to indigenous tribes located immediately west of the said states, is one thousand five hundred and forty-four. The number of warriors of indigenous tribes within striking distance of the western frontier, is forty-three thousand three hundred and eighty-five. Total number

of warriors, sixty-one thousand two hundred and thirty-nine.

Post Office.

The following statement of the condition of the Post Office Department at two different periods, exhibits a fair picture of the rapid growth of the nation and the extension of business. The increase of business, etc., of other departments of government, as well as in individual enterprise, has been in about the same ratio. In 1790, there were in the United States:—

Post offices,	75
Total amount of receipts for postage,	$37,935
Total expenditures,	$32,140
Extent of Post roads in miles,	1,875
Miles of annual mail transportation,	9,375

In 1839, or half a century later, there were:—

Post Offices	12,780
Total amount of receipts for postage,	$4,476,638
Total expenditures,	$4,624,117
Extent of Post roads in miles,	133,999
Miles of annual mail transportation,	34,496,878

The extent of mail transportation, stated above, is exclusive of the distance it is carried by steamboats and other vessels. The business is conducted in the Post Master General's office, by himself, his three assistants, and fifty-six clerks and messengers, whose aggregate salaries amount to $79,000; and in the Auditor's office, by himself and fifty-two clerks and messengers, whose aggregate salaries amount to $64,980. The communications received in the different offices, excluding the Auditor's office, amount to a daily average of about 900 for the working days, equal to 281,700 a year; the communications sent, to about 500 daily, equal to 156,500 a year, and the cases actually decided by the Post Master General, to fifty daily, equal to 15,650 a year.

Revolutionary Pensioners.

There were living in 1839, thirty-two thousand nine hundred and twenty-five soldiers of the revolutionary army, who received pensions from government.

PICTURE OF BRITISH GUIANA.

The following is from a Demerara paper:—"Whether the colony be surveyed by the eye of philosophy or of industrious speculation in business, it presents the most encouraging prospect to the adventurer; and there is not a province under the sun where a small capitalist could sow the seeds of a fortune with better hopes of an early and plentiful harvest than in this despised colony of British Guiana; nor is there a soil that ever was blessed by the sun and the rains of heaven, in which a poor man, without any thing but his health and strength of body and mind, could commence, on which he would more certainly become comfortable and independent than on this. It is peculiarly fitted for giving employment to all ages of both sexes. The poor of Ireland, England and Scotland, who have large families, in thousands of instances cannot avail themselves of the assistance of their children in the prosecution of their labor, because, in country districts particularly, where agriculture is the chief employment, strong hands are required, and of these there is generally a superabundance, so that the young and the weak are deprived of the opportunity of contributing toward their own support; but if a thousand poor laboring men, each with ten of a family, should arrive in this colony, they could get work for every one of them that was able to pluck a coffee berry or pull a weed out of the provision grounds. The animal, vegetable and mineral kingdoms, vie with each other in the abundance, and in the obsequiousness of their presentation. In the former two, particularly, human agency is required rather to check and subdue the redundancy of the productions, than to increase their prolific qualities; and in the latter, if we are to believe the testimony of naturalists and scientific travellers who have investigated the subject, there are numerous rich and extensive mines of the precious metals, concealed only by a superstratum, which could be without much difficulty removed. Let us go forth into the woods, and at every step we are introduced to new scenes of beauty; flowers of varied hue and dimensions salute us with their delightful and health-giving fragrance; around us stand the mighty and majestic trunks of the finest and most durable timber in the world, and over our heads wave in refreshing shade their undecaying foliage; and ever and anon, as they move to and fro in graceful oscillations, they discover to the beholder the dazzling plumage of the individuals of the feathered tribe, for the beauty and grandeur of which this colony is so distinguished. Every aged tree is clasped about with its parasites and climbing plants, as an affectionate family cling to the counsel and support of their aged and venerable parents. The whole forest is embalmed with spice, and the fields are carpeted with eternal green."

A RELIC OF ANCIENT DAYS.

The following curious relic of bygone days is copied from the minutes or records of the Corporation of Albany:—

"The Commissioners of Albany to the Governor at New York.

"1 January 1680-1

"Hon'd Sir

"According to former practices in this season

of the year, we have sent this post to acquaint you how all affairs are here, with us, Which is Thanks be to God, all in peace & quietnesse. The Lord continue to you the same thro your whole government. We doubt not but you have seen the Dreadfull Comett Starr it appeared in the South west on ye 9th of December last about two o clock in ye afternoon fair Sunn Shynne weather a little above the Sun which takes its course more notherly—and was seen ye Sunday night after, about twy light, with a very fyery tail or Streamer in ye west to ye great astonishment of all spectators and is now seen every night in clear weather—

"Undoubtedly God threatens us with Dreadful punishments if we do not repent—We wou'd have caused ye domine to proclaim a day of fasting and humiliation to-morrow to be kept—the 12th day of January in ye town of Albany and Dependencies, if we thought our power and authority did extend so far, and would have been well received by yourself, for all persons ought to humble themselves in such a time and pray to God to withdraw his righteous Judgments from us as he did to Ninevah—Therefore if you would be pleased to grant your approbation we would willingly cause a day of fasting and humiliation to be kept, if it were monthly—whose answer we shall expect by the Bearer. Wee cannot forbear to acquaint you of a very great Scearcity of Corn throughout our jurisdiction which is ten times more than was expected now when ye people Come to thrash, So it is supposed there will scearce be Corn to supply ye inhabitants here with bread—

"This is all at present wishing you and your Council a happy New Year shall break off and remain.

"Your humble and obed't Servants Ye Commiss'rs of Albany.

"Mr. Thomas Ashton Commander
Marte Gerritson
D Wessels
Corns Van Dyck
J Provost
J Bleecker
H Van Ness

"Extraordinary Vegarderinge gehonden is January A D 1680-1.

"The Indian Wattowit must have a blanket and shirt at New York."

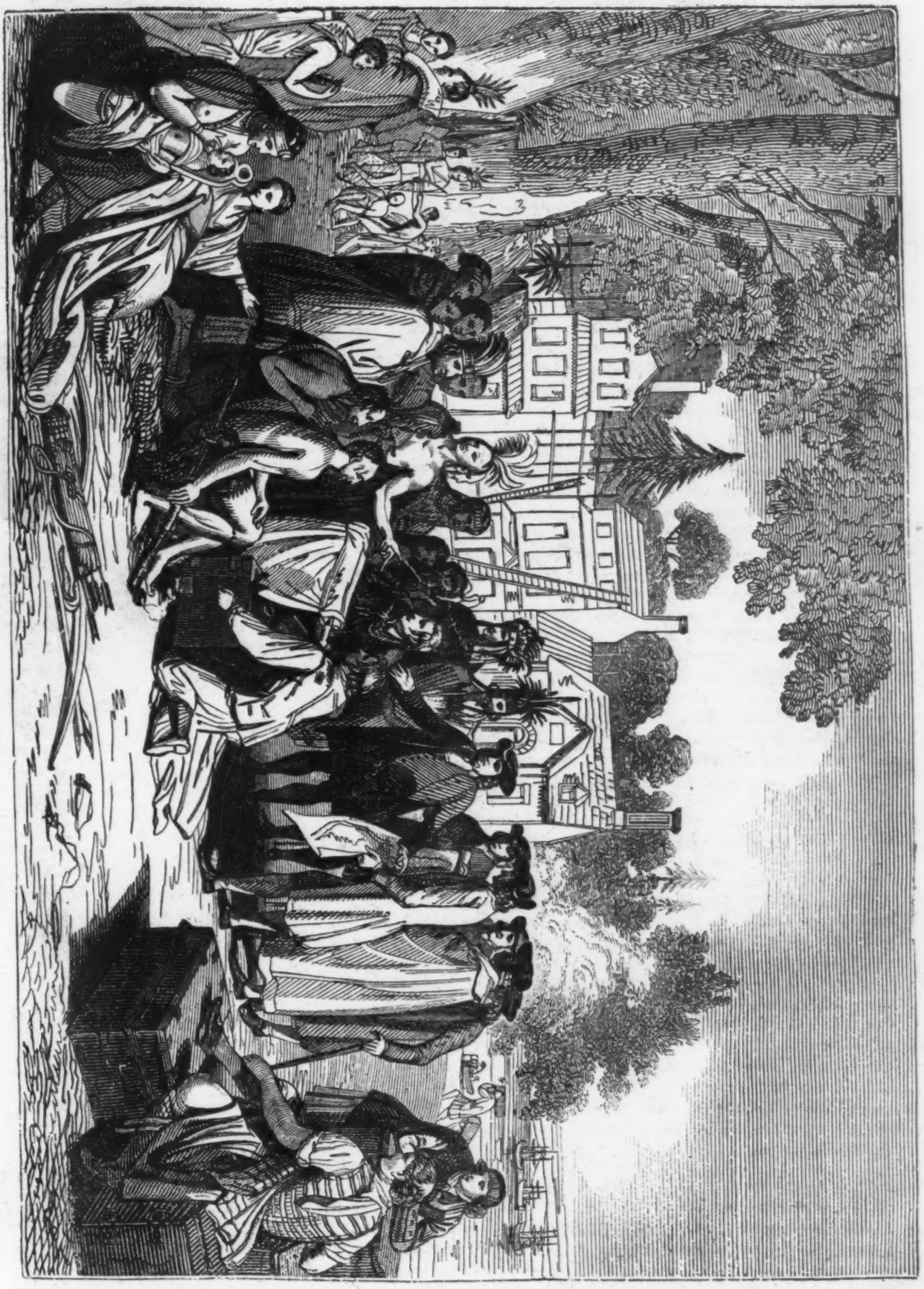
CALIFORNIA.

Considerable attention is at this time turned toward California, a region of country contiguous to the southwestern boundary of the Oregon territory, large portions of which are said to be of the most fertile character. In a late number of a western paper, we find the following remarks relative to the occupation of this region

"We notice the Arkansas papers begin to talk about annexing the province of California to the Western Territory. The next news we shall hear, it may be, will be that a company has formed to go out and establish a colony on the Gulf of California. The best harbors on the Pacific are found in the Peninsula of California, while the amenity of the climate and the richness of the soil is not surpassed by the garden spots of the earth. In natural advantages, even Texas, with all its boasted agricultural facilities, would not compare with the regions round about California. It is the paradise of North America. The possession of the country is nominally in Mexico. The territory, however is unoccupied, and in a wild state, with the exception of a few small settlements separated by remote distance There then, is the finest country on the globe, open to the first occupants. We should not be surprised soon to hear of our adventurous pioneers in the west moving to that remote quarter. It is not much farther off than Texas used to be, when the first settlement of the young Republic was made.

"A yankee colony, then, would be a great acquisition to Mexico, if the government were disposed to receive them kindly. At any rate the point is so distant from the settled provinces of Mexico, that the intruders might remain safe from molestation. Mexico is too busy in keeping her own unruly population in subjection to find time to be troubling herself about a small American settlement in a remote corner of her dominions. The fact is becoming obvious that Mexico cannot long retain a hold of her unwieldy domain. Great Britain or France will ere long be stretching their hands towards California, if we do not. The plan of a colony on the Gulf, we think is not a bad one. Like the colony planted in Texas, twenty years ago, it would prove to be a prolific germ, that would grow rapidly, and soon expand into a flourishing and powerful republic. The time has perhaps not quite arrived for the accomplishment of the scheme, but the day cannot be far off when the Anglo-Saxon settlements will be seen planted on the shores of the Pacific. The Mexicans will never muster enterprise and industry enough to settle and subdue the country. To a harder and more civilized race will belong the glory of founding an empire of Federal Republican states along the Pacific coast, extending from the extremity of California to the boundary of the Oregon Territory."

It has been ascertained by a committee appointed to procure and report statistical information relative to the cultivation of tobacco in the United States, that there are about one million five hundred thousand souls engaged in the manufacture and cultivation of tobacco in the United States: one million of whom are in the States of Virginia, Maryland, Kentucky, and Missouri Allowing the population of all the States to be fifteen millions, then it appears that one tenth of our people are in some way engaged in the tobacco business, either as cultivators or manufacturers.



TREATY OF WILLIAM PENN WITH THE INDIANS.

WM. PENN'S TREATY WITH THE INDIANS.

Our frontispiece represents one of the most remarkable and interesting events in the life of William Penn, and in the history of the world. It is a copy of the late Benjamin West's picture of the meeting of Penn and the Indian chiefs, for the ratification of the sale of the territory of Pennsylvania, by the latter to the former, and the conclusion of a treaty of peace and amity between the two parties.

Penn had received the property of the vast tract of land constituting the present state of Pennsylvania, by patent from Charles II., in March, 1681; but he did not deem the royal grant to be sufficient authority for his taking possession of the country, until he had obtained the consent of those by whom it was actually inhabited. Accordingly, very soon after his patent had been signed, he deputed commissioners to proceed to America, and to enter into a negotiation with the Indians for the fair purchase of so much of the territory as they claimed a right to. The desired arrangement was made with little difficulty; and the following year, Penn having himself come over to view his acquisition, it was resolved that the compact which had been made should be solemnly confirmed.

The principles and regulations which Penn had laid down from the first, for the treatment of the native inhabitants, and the management of the intercourse between them and the European colonists, were characterized by a spirit of liberality exceedingly remarkable for that age. It was made part of the conditions on which grants of land were made to adventurers, that all mercantile transactions with the Indians should take place in the public market; that any wrong done to an Indian should be punished in the same manner as if a white man had been the person injured; and that all differences between planters and Indians should be settled by the verdict of twelve men, six of the one class and six of the other. And in a letter addressed to the Indians themselves, after mentioning the existence of a great God, or Power, the Creator of the world, who hath commanded us all to love, to help, and to do good to one another, he continued;—"I would have you well observe that I am very sensible of the unkindness and injustice which have been too much exercised toward you by the people of these parts of the world, who have sought themselves to make great advantages by you, rather than to be examples of goodness and patience unto you. This, I hear, hath been a matter of trouble to you, and caused great grudging and animosities, sometimes to the shedding of blood, which hath made the great God angry. But I am not such a man, as is well known in my own country. I have great love and regard toward you, and desire to win and gain your love and friendship by a kind, just, and peaceable life; and the people I send are of the same mind, and shall in all things behave themselves accordingly; and if, in anything, any shall offend you or your people, you shall have a full and speedy satisfaction for the same, by an equal number of just men on both sides, that by no means you may have just occasion of being offended against them."

By the Europeans who first landed on the new continent, and by almost all who had followed them till then, the unhappy natives had been treated as if they had possessed no more rights of any kind, than the lower animals that occupied the wilderness along with them. Penn was the first who really recognised them as belonging to the family of man.

It had been agreed that the meeting for the ratification of the compact should take place at Coaquannoe, the name given by the Indians to the spot on which Philadelphia now stands. The parties, however, after assembling, proceeded a little higher up the Delaware, to a place then called Shackamaxen, on which the adjoining village of Kensington has been since built, and where there grew an immense elm, under the spreading branches of which the leaders on both sides took their station. Mr. Clarkson, in his "Life of Penn," (2 vols. 8vo., Lon. 1813,) expresses his regret that in no historian has he been able to find any detailed account of the circumstances of this meeting, though the event itself is so famous. He gives, however, some interesting particulars, principally derived from the traditions preserved in Quaker families, descended from those who were present on the occasion. "William Penn," he says, "appeared in his usual clothes. He had no crown, sceptre, mace, sword, halbert, or any insignia of eminence. He was distinguished only by wearing a sky-blue sash around his waist, which was made of silk network, and which was of no larger apparent dimensions than an officer's military sash, and much like it except in color. On his right hand was Colonel Markham, his relation and secretary, and on his left his friend Pearson; after whom followed a train of Quakers. Before him were carried various articles of merchandise, which, when they came near the sachems, (or kings,) were spread upon the ground. He held a roll of parchment, containing the confirmation of the treaty of purchase and amity, in his hand. One of the sachems, who was the chief of them, then put upon his head a kind of chaplet, in which appeared a small horn. This, as among the primitive eastern nations, and according to Scripture language, was an emblem of kingly power; and whenever the chief, who had a right to wear it, put it on, it was understood that the place was made sacred, and the persons of all present inviolable. Upon putting on this horn, the Indians threw down their bows and arrows, and seated themselves round their chiefs, in the form of a half-moon, upon the ground. The chief sachem then announced to William Penn, by means of an interpreter, that the nations were ready to hear him."

Penn's speech appears to have embraced nearly the same topics as his letter already quoted. After its delivery he unrolled the parchment, and, by means of the interpreter, explained it article by article. The compact was based upon the principle that the land was to be common to the Indians and to the English; and that the natives were to have the same liberty to do what was

necessary for the improvement of their grounds, and the providing of sustenance for their families which the settlers had. "He then," says Mr. Clarkson, "paid them for the land, and made them many presents besides, from the merchandise which had been spread before them. Having done this, he laid the roll of parchment on the ground, observing again, that the ground should be common to both people. He then added, that he would not do as the Marylanders did, that is, call them children or brothers only; for often parents were apt to whip their children too severely, and brothers sometimes would differ;—neither would he compare the friendship between him and them to a chain, for the rain might sometimes rust it, or a tree might fall and break it;—but he should consider them as the same flesh and blood with the Christians, and the same as if one man's body were to be divided into two parts. He then took up the parchment, and presented it to the sachem, who wore the horn in the chaplet, and desired him and the other sachems to preserve it carefully for three generations, that their children might know what had passed between them, just as if he had remained himself with them to repeat it." The solemn pledges of the Indians to perform faithfully their part in the contract followed his harangue.

Every thing connected with this treaty—the only one, as Voltaire has remarked, ever made with the native inhabitants of America and the Christians that was not ratified by an oath, and that was never broken—was long held in reverential remembrance by both the English and the Indians. The parchment roll was carefully preserved by the latter, and was exhibited by them in various conferences which they had with the English authorities, down nearly to the era of the independence of the colonies. The sash which Penn wore, Mr. Clarkson states, was, when he wrote, in the possession of Thomas Kett, Esq., of Seething Hall, near Norwich. The elm especially, which had shaded the assembled negotiators, became celebrated from that day. With such general veneration and affection was it regarded, that even the British General Simcoe, when he was quartered in the neighborhood, during the Revolutionary war, placed a sentinel under it to protect it from being injured by his men when they went out to collect firewood. It was, at last, however, blown down in 1811, when its trunk and branches were cut into various articles, to be preserved as memorials of the honored tree.

Penn, as he intimates in the passage we have just quoted, concluded several other treaties or bargains with the Indians after this, which may be called the foundation compact between the two parties. All these negotiations appear to have been conducted in a spirit of amity and mutual accommodation, which no attempt to obtain undue advantages, or any suspicion of such an attempt, on either side, ever disturbed. The state which Penn founded, although consisting of comparatively a mere handful of people, subsisted for several generations, as has been remarked, "in the midst of six Indian nations, without so much as a militia for its defence." Mr. Clarkson affirms, that, "as far as the Indians and Quakers (who may be considered as the descendants of William Penn) were concerned, the great treaty *was never violated*, a good understanding subsisting at this moment between them and the descendants of the original tribes.

A CHILD, one too wise and good for this world, saw on a summer's morning that the dewdrops did not lie and glitter upon the flowers, for the angry sun came in its might, and dried them up, and they were seen no more. Soon a rainbow was seen in the clouds, and his father told him, "There are the dewdrops over which thou didst grieve, and they now shine in splendor in heaven, and no foot can crush them; and remember, my child, if thou vanishest from earth, it will be to shine in heaven."

POLITICAL ECONOMY.—No. IV.

BY M. WILSON, ESQ.

HAVING, at the close of the preceding article, adverted to the effects of an extensive division of labor, both upon the productiveness of industry, and the physical capacities of the individual, it may be well to consider, here, the extent to which that division may be carried, and the causes which limit it. It is evident that, in every mechanical process, there must be, to the division of labor, a limit which arises from the nature of the operation itself. For, after the division has been carried to that extent, in which a simple operation cannot be performed by two men without both doing the same work, no farther division can be made; for it is no division of labor to employ two men to perform the same operation. Likewise, the supply being controlled by the demand, if the demand for the products of industry become too limited for the consumption of that quantity which a proper division of labor had hitherto created, a portion of the laborers would be obliged to seek other employments, and operations which, otherwise, would employ several individuals, will be performed by one, and the division of labor will be lessened in proportion to the number of laborers discharged. Thus, if there were, in a particular district, an establishment for the manufacture of nails, in which an economical division of labor would employ six individuals, it is evident that this division of labor would continue at its ultimatum, while the demand for nails continued equal to the supply; and the same amount of labor would also be productive of a much greater proportional amount of value than if it were thrown into two establishments, thereby rendering the division less. But if the demand for nails should decrease one half, a por-

tion of the laborers must be discharged, and those retained must perform a greater number of operations; and thus the extent of the division of labor is regulated by the demand for the article, or, in other words, by the extent of the market.

The effects of this principle are apparent in all newly-settled countries, where the same individual is often obliged to devote himself to several distinct occupations, owing to his inability to find a market for all the products which he could create in any one employment. Thus, a country carpenter deals in every kind of work that is made of wood; and a country blacksmith in every kind of work that is made of iron; and, in some poor, or thickly-settled districts, these two occupations are performed by the same individual. But in the city, the labor of the carpenter and the blacksmith is divided among a great number of individuals, and the occupation of each is a distinct trade by itself. From the occupation of a country carpenter, there arise, in a wealthy and populous community, the several distinct trades of joiner, cabinet-maker, carver, ploughright, wheelright, &c, and each of these is liable to many subdivisions. The several professions also admit of numerous divisions of labor which are regulated by similar principles. A teacher of youth, in a country village, must give instruction in the various branches, which, in some seminaries of learning, are divided among ten or a dozen individuals. While in this country, a lawyer is supposed to be acquainted with the science and practice of all the various branches of the law, in England, the division of labor has been carried to considerable extent in this profession also, and the causes which have produced it are, a greater demand for the labor in one case than in the other, and the ability and willingness to pay for the superior skill which the division naturally occasions.

As large manufactories, owing to the extensive division of labor in them, and the employment of a large number of operatives, require large accumulations of capital, it is evident that they will seldom be found in poor districts or in newly-settled countries. The products of new countries will therefore consist, mostly, of the raw materials which require but little division of labor for their production. The early American colonies had no manufactories; they exported the products of their industry, and received in exchange the manufactures of older countries, and even now, from our cotton growing states, the raw cotton is carried abroad, to be made into cloth where there are greater accumulations of capital and more extensive divisions of labor.

There are also certain physiological laws, which man cannot alter or essentially modify, which regulate and limit the division of labor in different countries. No one country produces all the articles of desire required by its inhabitants, and, much less, can one individual produce for himself all the ordinary necessaries of life. One country is naturally adapted, by its soil and climate, to the growth of wheat; another to the cultivation of cotton; another to teas and spices and tropical fruits; one country is adapted to pasturage, another to agriculture, and another to manufactures; and the productions of one country, whether animal or vegetable, are seldom congenial to the soil and the climate of many others. The most simple articles of our food and clothing are brought together from all quarters of the globe, and the joint productions of hundreds, and, in some cases, of thousands, contribute to the supply. How many persons, for example, must have contributed to the production of the woollen coat of the day laborer! There must have been the shepherd, the sorter of the wool, the carder, the dyer, the spinner, the weaver, the fuller, the dresser, the tailor, the various manufacturers of the needles and the buttons, and of the machines and tools of each of these workmen; and, in addition to these, numerous others who have contributed to the support of these several employments. The very shears of the shepherd have required a multitude of workmen. There must have been the miner of the ore, the builder of the furnace for smelting it, the feller of the timber, the burner of the charcoal, the brickmaker, the bricklayer, the attendants of the furnace, the mill-wright, the forger, the smith, &c., and each of these employments had many others subservient to it. And then how many merchants and carriers—how much commerce and navigation must have been employed in transporting the materials:—even the very drugs of the dyer often come from the remotest corners of the globe. And were we to examine the different parts of the dress, and each article of the household furniture of the laborer, we should be sensible that, without the assistance and co-operation of many thousands, he could not be supplied with even the scanty necessaries of life.

As what has thus far been said relative to labor and capital refers to the principles of each separately, and as all production is the result of the application of labor to capital, we shall proceed to consider some of the general principles which regulate their union, reserving the more intricate subjects of wages, profits, and rents, for a future article. In the early stages of society we seldom find, in the hands of individuals, large accumulations of capital—the results of patient industry. Although other causes here conspire to prevent those accumulations which are found in a well-organized society, yet one prominent, primary cause, which lies at the foundation of all, and prevents improvement in the arts and sciences,

as well as increase of wealth, is *insecurity of property.* It matters little what advantages nature herself offers to the tiller of the soil, if the avails of his industry are ever liable to be taken from him by the incursions of a hostile tribe, or by the rapacious hands of a tyrant;—by a foreign foe, or by domestic oppression; as, in either case there can be no stimulus to industry, there being no certain reward of labor. This proposition is self-evident and requires no illustration, but there is another application of the principle, of no less importance, which might not be so readily perceived or admitted. Wise and efficacious laws, and the adoption of all salutary measures to prevent the violation of the right of property, either by governments or individuals, are certainly of primary importance to the encouragement of industry and the promotion of national wealth; but there may be perfect security of property, so far as any direct violation of it is concerned, and yet such a want of confidence, with respect to finance, commerce, or exchanges, in the established regulations of government: or such a want of confidence, from whatever causes, respecting future events, as to throw a damp upon all enterprise, and prevent the employment of capital and industry by rendering their results uncertain and hazardous. The general policy and measures of the government form a portion of the capital of the citizen, upon the wisdom and permanency of which he should be entitled to depend with as much confidence, as upon the sun which warms, and the rains that fertilize the earth. For, if, during one year or one administration, the government, by a partial and restrictive policy, throw its influence in favor of, and its protection over commerce; and during another over agriculture, and another over manufactures; if, during one year, it attempts, either directly or indirectly, to regulate exchanges; and during another throws the burden upon the people, or adopts some new policy:—if, in fine, with a change of men and administrations, the citizen has no guarantee against a change of measures and the adoption of untried and doubtful experiments, he has no guarantee for the security of his investments or the avails of his industry. In such a state of affairs—a time of confusion and change—while there is no confidence in the permanency of the regulations of government, there can be little credit among individuals, and without credit and confidence among the people, a general depression of business must ensue. Thus, from whatever causes this distrust or want of confidence, either in government or in individuals, arises, the effects upon national and individual prosperity must ever be disastrous in the extreme. Want of permanency in the regulations of government is an evil of greater magnitude, and more extensive in its influence, than is often imagined. As poor laws are better than none, so those which are permanent, although not the wisest, are better than those which are perpetually changing. It must not be supposed, however, that laws, which aim at exerting a direct influence upon production, are often beneficial in their effects, for the contrary has almost invariably been their results. It appears to be the legitimate province of government, to encourage and protect, by wise and permament laws, rather than to direct and limit, those exertions of industry and employments of capital which the citizens themselves deem the most conducive to their interests.

Strictly speaking, there is no act of government but what has some influence upon production; but we propose to advert, here, to some of those which avowedly aim at the exertion of such influence. Governments have attempted to influence production, either by prescribing the raising of particular kinds of produce which they judged more advantageous than others, or by prescribing methods of production which they imagined preferable to other methods.

Of the European nations, the French have probably taken the lead in this system of government regulations, although all have, more or less, been its associates. No longer ago than 1794, some persons in France were persecuted and even brought to the scaffold, for having converted corn land into pasturage. These individuals found it more profitable to raise cattle than to cultivate corn, yet the government, thinking it knew the interests of the people better than they themselves understood them, or that the common interests of the public differed from the separate interests of individuals, had attempted, by legislative interference, to regulate the nature of products in order to increase the total value of production. The government has here overlooked the principle, that if an estate will produce to the occupant a greater amount of value in cattle than in corn, it thereby enables him to obtain, by an exchange, a greater amount of corn than could have been obtained by its cultivation. It might be supposed the corn was not to be obtained, but the very circumstance of its being more profitable to raise cattle than to cultivate corn shows the falsity of this supposition. As soon, however, as there had been the prospect of a scarcity of corn, individual interest would have been a sufficient motive to direct to its cultivation. The only question then seems to be, which is the most likely to know what kind of cultivation will yield the largest returns, the cultivator or the government; the one residing at the spot, and immediately interested to increase the total value of the products, and the other but

partially interested and having necessarily but a very limited knowledge of the wants and circumstances of the people.

Again adopting it as a maxim, that it is better to buy products dear when the price remains in the country, than to get them from foreign powers, France has attempted to compel, in some instances, the cultivation of products that are not congenial to her soil and climate. The cultivation of the beet root and the manufacture of sugar therefrom, have been forced upon the cultivator when other products would have yielded a much greater return. If the grape, instead of the beet root had been cultivated, the wine produced from the same land, would have obtained a greater quantity of foreign sugar which would have been equally the product of the land, though first assuming the shape of wine. With respect to the price remaining in the country in the one case, the idea that the country is thereby benefitted is altogether fallacious. For although the price remains in the country, the products are not to be obtained without a sacrifice of labor and material, whose value are as effectually lost to the community which has consumed them, although still retaining their equivalent, as if they had paid to some foreign country the price of the labor and material consumed. If the consumer can, in either case, obtain a barrel of flour for five dollars, it makes no difference to him or to the country whether it be the product of domestic or of foreign industry, although, in one case, the price paid remains in the country, and, in the other, leaves it. Let us suppose, for illustration, that it be a product of domestic industry—and that its value is estimated or measured by ten days' labor. The ten days' labor is the value consumed and entirely lost in the production, and the laborer receives, for the same, five dollars from the consumer. The price indeed now remains in the country, but neither is the laborer nor the country any better off than if a different kind of industry, which gave the same results, had been employed. There has been, in this case, the consumption or loss of ten days labor, the reappearance of its equivalent value in another form, the employment of the labor in the country, and and the retention of the price of it there. Now, the other case, in which the price leaves the country, will be found to be, in its results, exactly parallel. The consumer pays the importer five dollars for the barrel of flour, so that the importer is reimbursed for the value of the labor which its production has cost. Yet a value of five dollars hrs left the country! True: and a value equal in amount has been returned to it. Therefore the country has lost nothing. But where is the industry that, in the other case, was employed in creating this product which is now obtained from abroad? The same amount of industry has, in this case also, been employed, and *its* price still remains in the country. The industry has been employed in creating products, or in obtaining specie wherewith to pay for the flour imported, and the consumer has paid the laborers for the same. And, evidently, the consumer pays the same in the one case as in the other, the only difference being that in the one he pays domestic industry for the flour itself, and, in the other, he pays it for some article which he can exchange, with the importer, for the flour. This illustration, it is hoped, will place in a clear light the error of a maxim that has led many astray, and which has puzzled many writers who were, in their own minds, convinced of, but could not well explain its falsity.

A FLORIDIAN SCENE.—W. H. C. H.

WHERE Pablo to the broad St John
His dark and briny tribute pays,
The wild deer leads her dappled fawn
Of graceful limb and timid gaze;
Rich sunshine falls on wave and land,
The gull is screaming overhead,
And on a beach of whitened sand
Lie wreathy shells with lips of red.

The jessamine hangs golden flowers
On ancient oaks in moss arrayed,
And proudly the palmetto towers,
While mock-birds warble in the shade;
Mounds, built by mortal hand, are near,
Green from the summit to the base,
Where, buried with the bow and spear,
Rest tribes, forgetful of the chase.

Cassada,* nigh the ocean shore,
Is now a ruin, wild and lone,
And on her battlements, no more
Is banner waved or trumpet blown;
Those doughty cavaliers are gone
Who hurled defiance there to France,
While the bright waters of St. John
Reflected flash of sword and lance.

But when the light of dying day
Falls on the crumbling wrecks of Time,
And the wan features of Decay
Wear softened beauty like the clime,
My fancy summons from the shroud
The nights of old Castile again,
And charging thousands shout aloud—
"St Jago strikes to-day for Spain!"

When mystic voices on the breeze
That fans the rolling deep, sweep by,
The spirit of the Yemassees,
Who ruled the land of yore, seem nigh;
For mournful marks, around where stood
Their palm-roofed lodges, yet are seen,
And in the shadows of the wood
Their tall funeral mounds are green.

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* Cassada, the name of an old Spanish fort, standing on the borders of the sea, which successfully resisted many attacks made upon it by the French, at the time of their invasion of Florida.

NATURAL HISTORY.

BATS.

Bats have, in all ages, been perplexing objects to systematic naturalists. They have been so on account of what appears to be their double character, the general structure of mammalia, and the motion of birds. With the ancients they were *aves non aves*, "birds yet not birds," and in the progress of natural science to something like a structural classification, they were sometimes arranged with one kind of animals and sometimes with another. Aldrovandi classed them with the ostrich, which, though it now appears absurd, was in accordance with the most striking, and therefore the first chosen ground of classification—the element in which the creatures moved. The bats were quadrupeds which could fly, but they could walk on the ground very imperfectly, or not at all. Ostriches were birds which could run well, but were altogether incapable of flight. Thus each had the structure of the one class and the motion of the other, which made them resemble each other as a sort of mongrels.

The *characters* of the bats as a group are: the skin of the sides produced into a broad and thin membrane, which extends to the points of the toes; the toes, or fingers, of the fore legs very much produced, and united by a thin and broad membrane; the thumb separated from the fingers, generally very short, and furnished with a strong crooked claw, which the fingers are generally without; the membrane wholly or nearly naked, and having a leathery appearance. The hind legs are much shorter than the fore, the toes on them but little produced, and each of the toes furnished with a crooked claw. The length of the tail varies, being in some of the species merely rudimental; it is generally included in the membrane, but does not appear to be the efficient instrument of steering or keeping the course in the flight of the animals. That appears to be done chiefly by the motions of the hind legs, while the fore legs are the grand instruments of flight. The hind legs have not any peculiar muscular structure, by means of which they can be very efficient in moving the wings, and, when the animal is extended, the motion which they have is horizontal rather than vertical. The fore legs, on the other hand, have little horizontal motion, and cannot be moved much either in advance or to the rear; but their vertical motion is powerful; and, in order to give insertion to the large pectoral muscles which produce it, the sternum or breast-bone is provided with a prominent *crista* or ridge. The shoulder-joint, or articulation of the *humerus*, admits of a considerable range both of elevation and depression; but the joints of the elbows, wrists, and fingers, do not admit of being stretched beyond the straight line. The wings, or rather the "membranes of flight," for they are not wings either in the form of their bones or the nature of their covering, thus admit of partial flexure or folding when they are raised; and when they first "take the air," in their downward stroke, they are hollow, by which means they take a better hold, and this hollowness in some degree compensates for the want of feathers, the fibrous structure of which takes hold of the air without the assistance of hollowness, at least to the same extent. The membrane of flight is very thin and light, and admits of being folded into very little space when the animal is in a state of repose. Such are the general characters as dependant upon the organs of motion.

The organs of nourishment have a general resemblance to those of the other mammalia which feed upon insects and other small invertebrate animals; but with a general modification to suit the habit of the tribe, and particular ones in the dfferent genera.

The organs of sense are variously developed. The ears are in general large, and in some of the species they have a duplicature or second concha, as if there were one ear within another. It is hence presumed that the sense of hearing is acute; and it *may* be that those which have the duplicature to the ears have the means of closing up the auditory passage, so that they may not be disturbed in their repose during the day. The nostrils and also the mouth are also sometimes surrounded by produced membranes, the use of which is not very well known. Perhaps they aid the sense of smelling, which is generally acute in nocturnal feeders; perhaps they assist in the capture of the insect prey; and perhaps they are in some measure organs of touch. The eyes are very small and deeply enfonced, something like the eyes of moles; and though they must have the power of vision, it does not appear that they are essential to the animal in finding its way, even when that is intricate. The well-known experiments of Spallanzani, which were verified by others, proved that when blindfolded or even blinded, bats can find their way through between obstacles of which they could have had no previous knowledge; and indeed though we, reasoning from ourselves as the example, are very apt to suppose that what we call the caution of animals is a matter of experience, yet, prejudice and false analogy apart, experience appears to have little or nothing to do in the matter. Spallanzani suspended willow rods in the room in which he turned the blind bats loose to fly; but, though he shifted these so as to make the passage between them as varied and as intricate as possible, the bats never struck against one of them, though they kept flying about in all directions.

Bats are found in nearly every portion of the globe in the tropical and temperate regions, and they have even been seen, during the short summers, on the borders of the frigid zone. But it is only where the heat of the tropics gives birth and life to insects and vegetables in great profusion, the whole year round, that bats are very numerous. On the banks of the Nile, when, after it has overflowed its banks myriads of insects swarm into being, the ruins of the temples, and the tombs are literally filled with them, and the hang from the roofs of caves like living stalacti-

tes. In India, along the coast of the Mediterranean Sea, and Central America, bats of the largest species are very numerous, and frequently annoying.

The limits of a single article like this will not permit us to enter into a detailed description of the bat family, comprehending as it does, nearly one hundred and fifty species or varieties. We will briefly notice a few of the most distinctly marked genera, leaving others of less note, and the subgenera to the close investigation of the student of Natural History, whose business it is to learn the names, habits and economy of the whole.

Common Bat.

There are two great divisions of the bat family; those with teeth for bruising vegetable matter, and those with insectivorous teeth, that is, the crowns of the cheek teeth have prominent tubercles. Of the former there are two distinct kinds.

1. Petropus ("winged foot.") The members of this genus are decidedly the largest of the whole family, the bodies of some of the largest measuring a foot in length, and the extent of the wings or membranes, five feet. The Madagascar and the Vampyre are of this species. They are chiefly vegetable feeders, though they sometimes catch and eat birds, and the smaller mammalia. Many stories have been told of the Vampyre bat, concerning its sucking the blood of human beings and other animals, while asleep.

2. Cephalotus. The flying membranes of this species are different from those of the former, as they meet at the dorsal line, or ridge of the back, instead of being attached to the sides.

Of the second division of the bat family (those with *insectivorous teeth*) there are twelve distinct varieties.

1. Molussus. These have the head large, the ears also large, and united to each other at the base, and furnished with a small secondary membrane. They are sometimes called "bull dog bats" from the shape of the head. They are chiefly confined to America.

2. Nyctinomus. These have two large conical front teeth, grinders with sharp tubercles, lips deeply wrinkled, nose flat, ears large and united at their base, with an external duplicature. The wings are very large, and the hinder legs are covered with long hair.

Noctilio.

3. Noctilio. This genus have four front teeth above, the two middle ones longer than the others; grinders with very sharp tubercles, muzzle short and cleft with a furrow in a manner similar to that of the hare, ears small and not united at their bases, claws of the hind feet large and strong, for the purpose of suspension. The body is generally four or five inches long, and the spread of the wings at least a foot and a half. These are natives of South America.

4. Phyllostoma. This genus is so called from the leaf-like appendages which are attached to the mouth, or rather to the nose, one of which has very much the form of a leaf, the other more that of a horse shoe. The tongue is protensile and furnished with papillæ, which adapt it for a sucking instrument. It is to this genus that the Vampyre bat belongs. They are all natives of the warm parts of this continent.

5. Megaderma. (large skin,) So called from the great production of membrane about the nose. Their noses are more leafed than in the others just mentioned, the external ears are united at the top of the head, the tongue is very smooth, and they are entirely *tailless*.

6. Rhinolphus. (crested nose,) or horse-shoe bats. These are so styled in consequence of the nasal membrane extending toward the forehead in a shape which resembles a horse shoe. They are seldom more than four inches in length. They are natives of the eastern world, and are most abundant in the Oriental Archipelago.

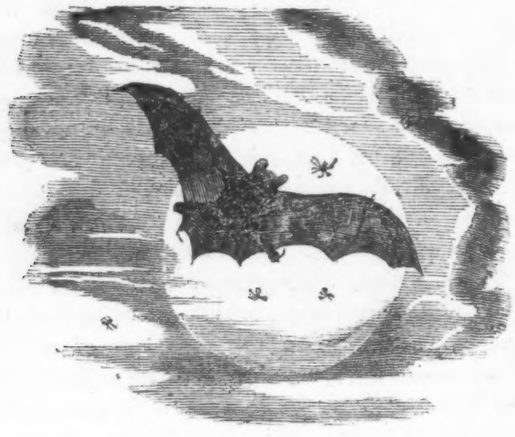
7. Nycteris. These have a longitudinal furrow along the forehead, ears very large but not joined to each other; a pouch on each side of the

mouth, opening into a sac formed of a duplicature of the skin. They are of small size, long wings, and inhabitants of Africa.

8. Rhinopama. The nose long and blunt, appearing truncated, and the nostrils capable of being closed at the pleasure of the animal; ears long, hanging over the face, containing an inner membrane, and united at their base. This bat is a native of Africa, but has been sometimes found in Europe and even America.

9. Taphozous. These have a rounded channel upon the forehead, but without a membraneous appendage upon the nose; head of pyramidal form, four front teeth in the under jaw, and in the upper sometimes two and frequently none. The males have a cavity placed crosswise in the throat, and a membrane is so produced as to form a kind of pouch upon the wrist. These bats are found in the warmer latitudes of Africa, and it is said that some have been seen in North America.

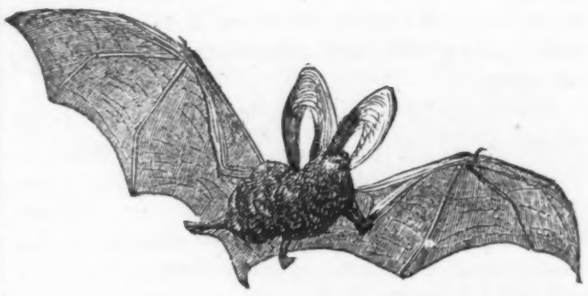
10. Mormoops, (owl-eyed bats.) These have a triangular membrane on each side of the face, extending from the nose to the ear, which forms a kind of shade to the eye. They are found in the Oriental Archipelago.



Pigmy Vespertillio.

11. Vespertillio. This genus comprehends the large varieties of the common bat, and are widely distributed throughout the globe. These are common in this country during the twilight in summer, yet they are by no means very abundant. It is only in very warm climates where animal life is the most energetic, that any of the genera can be found in great numbers.

12. Plecotus, (long-eared bats.) These are without any appendage to the nose; the ears are as long as the whole head, and in many instances longer; the internal duplicatures are lancet shaped, and there is a lid to the auditory passage that may be opened and shut at the pleasure of the animal. They are found in both the eastern and western hemispheres, and one species is quite common in England.



Long-eared Bat.

From this short and incomplete list of the genera, not including the numerous species that have no history, it will be seen that the study of the natural history of the bat family is no short or easy matter. Their vast number and variety, their being most abundant in those places where all natural action is most energetic, and their being fitted for living on so many different kinds of food, show that the part which they perform in the wild economy of nature, must be an important one. The service which they render to vegetation by the destruction of insects, is considerable, and some of the hot countries in which they swarm by myriads, could not, but for them, be inhabited. In humid places on the margins of tropical forests, moschetoes are troublesome enough as it is; but if the bats did not thin their numbers, they would be utterly unbearable.

From the Democratic Review.

THE MINERAL LANDS OF THE UNITED STATES.*

No nation is, or ever was, situated as regards its public domain, as the United States have been, and now are. The richest Crown Lands of Europe are utterly insignificant, when compared to the vast territory which has been purchased, and yet remains to be purchased, of the receding and unfortunate Indians. We reckon its extent not by millions, but by hundreds or thousands of millions of acres. It embraces whole provinces, half a continent. Had these lands fallen into the power of a monarch, instead of becoming the property of a nation, he might, with his limitless wealth, have subjugated the world. As it is, the responsibility of this Union to itself, to posterity, in the management and disposition of this rich national heritage, is great indeed.

Accordingly we find, that the subject of the Public Lands, and the various questions therewith connected—their price, their ownership, their settlement, their distribution—have, at all times since the birth of our Republic, engrossed

* Report of a Geological Exploration of part of Iowa, Wisconsin and Illinois, made under instructions from the Secretary of the Treasury of the United States, by David Dale Owen, M. D., Principal Agent to explore the Mineral Lands of the United States, in the autumn of the year 1839. Printed by order of the Senate of the United States.

much of the time of Congress, and of the thoughts of the people.

But one portion of this important subject has obtained, as yet, little attention. The lands have been regularly surveyed, and have been put up for sale; at first at auction, so that the most valuable tracts might command, under fair competition, a corresponding price; and the rest offered to the people at a rate so low, that a single year's saving of an industrious and economical mechanic may place him in possession of a farm and homestead, such as a lifetime of toil might fail, in older countries, to obtain for him. It has been the custom, previously to these public sales, to make certain reservations, chiefly of tracts containing salines; occasionally of lands containing, or rather supposed to contain, valuable mineral deposites. But this has been done pretty much at hap-hazard—usually from the reports and recommendations of the United States' surveyors; and they, not being generally practical geologists, or competent judges of mineral appearances, nor indeed having the time or opportunity, even if they had possessed the science, necessary to detect and report the mineral value of the lands they surveyed, were not able to supply to the general land office any trustworthy data, whereupon to found a judicious system of mineral reservations.

This hitherto neglected subject appears to have attracted the attention of Congress during its session of 1838–9. A resolution was passed, calling upon the President to "cause to be prepared and presented to the next Congress, at an early day, a plan for the sale of the Public Mineral Lands, having reference as well to the amount of revenue to be derived from them and their value as public property, as to the equitable claims of individuals;" and the President was further requested, by the same resolution, to "communicate to Congress all the information in possession of the Treasury Department relative to the location, value, productiveness, and occupancy of these lands;" and also to "cause such further information to be collected, and surveys to be made, as may be necessary for these purposes."

In accordance with the last clause of the above resolution, Dr. David Dale Owen, of Indiana, who, for two years previously, had received the appointment, and performed the duties, of Geologist of that state, was appointed "principal agent to explore the Mineral Lands of the United States," and was instructed to proceed to Iowa, and undertake an exploration of about eleven thousand square miles of territory, lying in nearly equal portions on both sides of the Mississippi River, between latitudes forty-one and forty-three degrees; commencing at the mouth of Rock River, and extending thence north upward of a hundred miles, to the Wisconsin River, which discharges itself into the Mississippi immediately below Prairie du Chien. This tract of country nearly equals in extent the state of Maryland.

The result of the exploration is embodied in the report of Dr. Owen, a review of which forms the subject of the present article.

We have risen from the perusal of that report, strongly impressed as well by the industry and labor which it exhibits as by the scientific manner of its execution, and the popular style in which it is written. This, with its great value in other respects, will give it a high rank in the literature of the science of which it treats, and will secure to its author an enviable reputation.

And we are yet more greatly struck by the evidence it lays open, of the inestimable mines of wealth, hitherto hidden and unexplored, which the public domain of the United States contains within its confines.

Of the nature and extent of the duty required of Dr. Owen, and of the manner in which he proceeded to execute it, an idea may be formed by perusing the following extract from his introductory letter to the Commissioner of the Land Office, prefixed to the report. We believe that a task of similar character, and as comprehensive, was never, in the whole history of geology, executed in the same space of time before. After recapitulating the substance of his instructions, which reached him at his residence in Indiana on the 17th of August, 1839, and which required him to complete his survey, "before the approaching winter should set in," and to "note carefully the result of the examinations of the mineral appearances of each tract of land, its situation in the section, how occupied, and such facts as will serve to convey an idea of its value and productiveness," also to report to the General Land Office and to the Register lists of all such lands, from time to time, as fast as he should have completed the examinations of, say from ten to fifteen townships, sufficiently to enable him to certify to the fact, that they do not contain lead, mineral, or salines." Dr. Owen says:—

"After duly weighing the nature of my instructions, estimating the extent of country to be examined, considering the wild, unsettled character of a portion of it, and the scanty accommodations it could afford to a numerous party, (which rendered necessary a carefully calculated system of purveyance,) and ascertaining that the winter in that northern region commonly sets in with severity from the 10th to the middle of November, my first impression was, that the duty required of me was impracticable of completion within the given time, even with the liberal permission with regard to force accorded to me in my instructions. But on a more careful review of the means thus placed at my disposal, I finally arrived at the conclusion, that by using dilligent exertion, assuming much responsibility, and incurring an expense which I was aware the Department might possibly not have anticipated, I might, in strict accordance with my instructions, if favored by the weather and in other respects, succeed in completing the exploration in the required time.

"I therefore immediately commenced engaging sub-agents and assistants, and proceeded to St. Louis. There (at my own expense, to be repaid to me out of the *per diem* of the men employed) I laid in about three thousand dollars' worth of provisions and camp-furniture, including tents, which I caused to be made for the accommodation of the whole expedition; and in one month from the day on which I received my commission

and instructions, I had reached the mouth of Rock river, engaged one hundred and thirty-nine sub-agents and assistants, instructed my sub-agents in such elementary principles of geology as were necessary to the performance of the duty required of them, supplied them with ample mineralogical tests, with the application of which they were made acquainted, organized twenty-four working corps, furnished each with skeleton maps of the townships assigned to them for examination, and placed the whole at the points where their labors commenced, all along the southern line of the western half of the territory to be examined.

"Thence the expedition proceeded northward, each corps being required on the average, to overrun and examine thirty quarter-sections daily, and to report to me, on fixed days, at regular stations; to receive which reports, and to examine the country in person, I crossed the district under examination in an oblique direction eleven times in the course of the survey. Where appearances of particular interest presented themselves, I either diverged from my route in order to bestow upon these a more minute and thorough examination; or, when time did not permit this, I instructed Dr. John Locke, of Cincinnati, (formerly of the Geological Corps of Ohio, and at present Professor of Chymistry in the Medical College of Ohio,) whose valuable services I had been fortunate enough to engage on this expedition, to inspect these in my stead.

"By the 24th of October the exploration of the Dubuque District was completed, and the special reports of all the townships therein were despatched to your office and to the register office. On the 14th of November, the survey of the Mineral Point District was in a similar manner brought to a close; and by the 24th of November, our labors finally terminated at Stephenson, in Illinois; the examination of all the lands comprehended in my instructions having been completed in two months and six days from the date of our actual commencement in the field. Also several thousand specimens, some of rare beauty and interest, were collected, arranged, and labelled.

"The weather was favorable, and the winter did not set in with severity until about a fortnight later than is usual in that latitude. Yet the same day on which the survey was completed, a severe snow-storm occurred; a gale blew up from the northwest, the thermometer fell to twelve or fourteen degrees below zero, and the expedition could not have continued in the field a single day longer."

The results obtained by this extensive survey are as important in an economical point of view, and with reference to the future resources of this republic, as they will be interesting to the scientific world.

Dr. Owen commences his report by a succinct and lucid explanation of the geological character of the district surveyed; to which he has prefixed a few pages of prefatory remarks, explaining, in clear and plain language, and illustrating by several diagrams, just so much of the first principles of geological science as is indispensable to a correct understanding of what follows. We commend his brevity and the popular form into which he has cast these preliminary remarks. Accurate and solid scientific knowledge is indispensable to execute, with advantage to the public, a task like this; but an affectation of learning, wrapping itself up in obscure and verbose technicalities, is very much out of place in an official report like this; and is not, as we remember to have remarked, at all times avoided on such occasions.

Dr. Owen thus concludes this branch of his subject:—

"The general geological character of the country explored may be thus briefly summed up. It belongs to that class of rocks called, by recent geologists, *secondary*, and by others occasionally included in the *transition* series. It belongs, further, to a division of this class of rocks, described in Europe as the *Mountain Limestone*, or sometimes as the carboniferous or metalliferous or encrinital limestone. And it belongs, yet more especially, to a subdivision of this group, known popularly where it occurs in the west, as the *Cliff Limestone*, and described under that name by the Geologists of Ohio. This last is the rock formation in which the lead, copper, and zinc of the region under consideration are almost exclusively found; and its unusual developement doubtless much conduces to the extraordinary mineral riches of this favored region."

The importance of the above investigation appears in a subsequent part of the report. In the chapter on the "Lead Mines," Dr. Owen has instituted a careful and interesting comparison between the surveyed district and the well known *Cross Fell* country of the north of England. He shows its close resemblance, both in the character of its rocks and in its geological position, to that celebrated mining district, the most productive lead region of the known world. The following passage, quoted by Dr. Owen from an English scientific work, illustrates the importance of the above comparison:—

"England produces annually nearly three times as much lead as all the other countries of Europe put together. The chief mines are in the north of England, in Derbyshire, North Wales, and Devonshire, on the borders of Cornwall. The great seat of the north of England mines is in that high district, around the mountain of *Cross Fell*, where the counties of Northumberland, Cumberland, Westmoreland, the North Riding of Yorkshire, and Durham meet, as it were in a central point, and from which they radiate. * * The mines in this part of England have yielded of late, on an average, about 25,000 tons of lead annually, which is more than one-half the whole produce of Great Britain."

Adverting to these statistical facts, Dr. Owen adds:—

"It appears, then, that the north of England lead district produces more than *one-third* of all the lead obtained in Europe. It is, confessedly, the richest lead region in the world; unless the Wisconsin lead region may rival and surpass it. I have, for this reason, sought up with care the materials, and here submitted them, for a comparison between the geological formation of that

favored mineral region in the Old World: and that, not less favored perhaps, to which, in this western portion of the New World, my instructions have directed my attention.

"The facts yet collected are not, to my mind, of sufficient number and force to authorize a decision that the lead-bearing rock formation of Northern England is *identical* with that of Wisconsin, in geological position and mineralogical character; but it certainly supplies proof, that the resemblance in both respects, but especially in the latter, is close and striking."

The chapter on the "Statistics of the Lead Mines" fully coroborates the inferences in regard to the value and productiveness of this lead region, which the above comparison suggests. It appears, according to the reports collected by Dr. Owen from the smelters themselves, that even under the numerous disadvantages to which this American lead region has hitherto been subjected, it probably produces, at this moment, *nearly as much lead as the whole of Europe, with the exception of Great Britain alone;* and that it has indisputable capabilities of *producing as much lead as all Europe, Great Britain included.*

The vast importance of such facts as these, in a national and commercial point of view, requires no comment. Indebted as America now is, probably in the amount of two hundred millions of dollars, chiefly in the shape of state stocks, to Europe, and compelled as she will be to pay a yearly interest on that debt of some ten millions annually to her great creditor, anything which aids in keeping the balance of trade in her favor, should attract the especial notice of the statesman. Every one knows that we have ever imported, and still continue to import, large quantities of lead from Europe. How unnecessary such importation would be, if enterprise were but directed to our own mineral lands, Dr. Owen's report well shows.

But the lead mines of the district which has been explored, form but a portion of its mineral resources. The chapter on copper ore and the appended analysis prove, that the copper ore of Wisconsin is richer and more valuable than that of Cornwall, the greatest copper district in Europe or the world: exceeding that ore in its yield by from *one-fifteenth* to *one-third;* and that this ore is found in abundance, and can be raised at the same expense per ton as the lead ore.

Further the report informs us, that zinc ore, in any desirable quantity, and of excellent quality, frequently occurs in the fissures along with the lead. From its earthy and porous aspect, resembling the cellular substance of bone, it is familiarly known among the miners by the name of "dry bones." In regard to this metal, Dr. Owen says:—

"Notwithstanding its intrinsic value, which will, before very long, be duly appreciated, it is at present an object of great aversion to the miner of Iowa and Wisconsin. It frequently happens, in both territories, that the lead ore in a fissure gradually diminishes, and eventually is entirely replaced by the zinc ore, or, as the disappointed workman sometimes with a hearty curse, not very scientifically, expresses it, the 'dry bone eats out the mineral.'"

Copper and zinc, it is well known, are the component parts of that important metal, brass. Hence the increased value of these two ores, when they are found, as in Iowa and Wisconsin, in each other's vicinity, sometimes in the same mine. Dr. Owen on this subject, informs us:—

"Large quantities both of copper and zinc are now imported from Europe into the United States to supply the continually increasing demand for brass. It is not improbable that the district now under consideration might furnish of both metals a sufficient amount, at least for many years to come, *to supply the entire United States* with brass of home produce and manufacture.

"Of zinc, at least, there is assuredly a sufficient supply, not only for that purpose, but also *for exportation.* All the zinc now produced in Great Britain is trifling in quantity and quite insufficient for the demand; so that a large quantity is imported annually into that island, chiefly from Germany and Belgium. The importation of zinc into England in the year 1833, exceeded six millions and a half of pounds; a fact which may give us an idea of the value of this metal as an article of commerce."

In addition to this the report states, that "iron ore, equal in quality to the Tennessee ores, is found throughout the district in such quantity, that iron works to any desirable extent might profitably be established there."

Upon the whole, Dr. Owen arrives at the conclusion, apparently fully warranted by the facts above stated, that the district he has explored, is ONE OF THE RICHEST MINERAL REGIONS (compared to its extent) YET KNOWN IN THE WORLD.

If this is to be considered an earnest of what may yet be found of mineral products in the vast unexplored territory lying west and north from the surveyed tract, it is difficult even vaguely to anticipate the effect which such discoveries may produce on the future commercial prosperity and national greatness of America. Wealth, in these modern days, is more powerful than the sword; and the original source of all wealth is on the earth's surface and in her bosom.

Even if such anticipations should not be fully realized, enough is disclosed in the report we are reviewing to satisfy us, and we believe the public also, of the propriety and importance of prosecuting, without delay, the business of exploration thus successfully commenced.

The publication, too, of such official evidence, as this before us, of the mineral resources of America, will incidentally produce an effect which must be very advantageous, as regards the settlement of the public lands in the northwest, by an enterprising and useful class of settlers. Dr. Owen's report will doubtless attract the attention of the scientific writers of Europe; and may be the means of rapidly drawing capital and enterprise from across the Atlantic. This would result, not only in advantage to the country, but also direct pecuniary gain to the government, under any plan which may be adopted for the sale of the Mineral Lands.

In addition to the important general results

here briefly sketched, the report is interspersed with a variety of curious and valuable incidental matter, much of it interesting to the scientific world, and some of it calculated to gratify the general reader.

Speaking of the Cliff Limestone, the rock in which the lead of this region occurs, Dr. Owen says:—

"It imparts to any country in which it abounds, a bold and romantic character. I allude to its disposition to cleave vertically and form perpendicular cliffs. These mural escarpments, exhibiting every variety of form, give to the otherwise monotonous character of the landscape in Iowa a varied and picturesque appearance. Sometimes they may be seen in the distance, rising from out the rolling hills of the prairie like ruined castles, moss-grown under the hand of time. Sometimes they present, even when more closely inspected, a curious resemblance to turrets and bastions, and even to the loop-holes and embrasures of a regular fortification. Sometimes single blocks are seen jutting forth, not unlike dormant windows, rising through the turf-clad roof of an old cottage; and again, at times, especially along the descending spurs of the hills, insulated masses emerge in a thousand fanciful shapes, in which the imagination readily recognises the appearance of giants, sphinxes, lions and innumerable other fantastic resemblances.

"The appearance of this rock is further modified by the peculiar manner in which it weathers. Numerous masses of chert, (a variety of flint,) and also many siliceous fossils are interspersed through its mass; and these, becoming gradually loosened by the action of air and water, drop out, and leave cavities of various shapes and sizes. Thus the rock is frequently found riddled with irregular holes, from a few inches to a foot in diameter, giving its surface a rugged and cavernous appearance. Frequently this variety in the composition of the rock gives occasion to an undermining process on the lower surface of the cliff, which gradually proceeds, until, perhaps, a towering and tottering column remains supported on a contracted base. which threatens every moment to give way, and precipitate the poised mass into the valley beneath."

This is graphic; and in truth we have often been tempted by the descriptions which reach us to visit this romantic prairie wilderness of the west, with its groves tastefully disposed over the landscape, as by the hand of art; its limpid streams fringed even to the water's edge by the rich verdure of the boundless meadows through which they steal, at times hardly visible through the luxuriant herbage which bends and unites over their banks; its magnificent herds of elk traversing, with their stately pace, as if in military array, these vast plains, while the skulking wolf sneaks through the long prairie-grass like the self-convicted culprit of the scene. Then the dusky lines of Indians, their blankets cast fancifully around them, defiling along the narrow, half-hidden trail, soon to leave for ever the beautiful homes of their fathers—the hunting-grounds of their tribe in those days long gone by, when the white-skins in their winged canoes had not yet crossed the Great Salt Lake to put out their council-fires, and to wrest from them year by year, and generation after generation, the land which the Great Spirit had given them for a heritage and a dwelling-place.

But we must not suffer our imagination to carry us away from Dr. Owen and his report, and our sober review of it. This is a matter-of-fact world, and a matter-of-fact age, and a matter-of-fact country of ours. Romance is fading away from it as the Red Man disappears. Where Black Hawk's council-fires blazed now rises the smoke of the smelter's furnace; where the buffalo sunk down, stricken by the old chief's bone-shod arrow, the miner sinks his shaft, to find richer reward than buffalo meat or buffalo skin.

In regard to the richness of that reward, Dr. Owen has some curious facts. He says:—

"One of the most experienced miners and smelters in the District writes to me:—'Two men can raise something near five hundred pounds from veins of average richness. Two men *have* raised as much as twenty thousand pounds a day from the richest veins.'

* * * * * * * *

"From a spot of ground not more than fifty yards square, upward of three million pounds of ore have been raised.

* * * * * * * *

"The facility with which, in some locations, ore can be raised is remarkable. Two boys of twelve and fourteen years old, were seen by us near Mineral Point, at work with a tiny windlass and bucket. They had earned one hundred and fifty dollars in the last six months, though they complained of having had "no luck" in not striking a productive lode.

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"On the northeast quarter of section thirty-one of township one, range one east of the principal meridian, two even raised sixteen thousand pounds in a day. On the northeast quarter of section twenty-one and the southeast quarter of section thirty-two, (same township,) two more raise regularly three thousand pounds a day. On the southwest quarter of section thirty-two, (same township,) a lode excavated horizontally from the face of a cliff to a distance of *a hundred and fifty yards*, yielded *a million pounds* of ore, which was carried out in wheelbarrows. And on the northwest quarter of section twenty-eight, (still on the same township,) *ten million pounds* were raised from a single lode, hardly extending across the quarter section."

We add another extract, descriptive of a curious natural leaden chamber:—

"In the spring of 1828, there was a mass of lead ore found in an east and west crevice, at the Vinegar Hill Diggings, about thirty-five feet in length; expanding in the centre, to the width of six or eight feet, and terminating in a point at each end. It was hollow, and averaged about a foot in thickness; forming, as it were, a huge shell of mineral. This extraordinary natural chamber was cleared out, a table spread within it on the Fourth of July; and a considerable company celebrated the National Anniversary within

its leaden walls, about sixty feet below the surface of the earth."

The interest of the report is much enhanced by its numerous charts, diagrams and other illustrations; some sketches of prairie scenery, some drawings of minerals and fossils, and one representing the interior of a mine, the mode of sinking shafts, of drifting, &c. One of the charts will possess much interest for the scientific world. It exhibits, accurately laid down, the boundaries of "an immense coal basin, which occupies the greater part of Illinois, about one third of Indiana, a northwestern strip of Kentucky, and occasionally encroaching beyond the Mississippi, extends a short distance into the State of Missouri and into the Burlington district of Iowa." This gigantic coal-field has never been laid down before; indeed no geologist until now has had, we believe, an opportunity of ascertaining its boundaries. Its northwestern margin extends over ten or twelve townships of the district surveyed by Dr. Owen, chiefly on the western side of the Mississippi.

From a table compiled by Dr. Owen and appended to the report, it appears, that the proportion of prairie, over the entire district explored, compared to timber, is in the proportion of about three to one. This would be a pretty fair proportion, were it not that about twothirds of the timber is but of dwarf growth and straggling character, there denominated "oak openings;" and that, in some localities, especially where copper ore abounds, it is almost wholly deficient. On this important subject of fuel, Dr. Owen says:—

"One of the difficulties which here occurs in reducing the ore, namely, the lack of fuel, is common to the richest copper countries in Europe. The Cornwall copper ore is conveyed partly to Swansea and other portions of Wales, and partly to Liverpool, to be smelted into a coal region; and the same vessels which thus convey the less bulky material to the more bulky—the ore to the fuel—return laden with coal to supply the numerous and powerful steam-engines required for draining and other purposes, at the Cornwall mines. And thus, in Wisconsin, if copper ore be raised in quantities, it may be necessary to convey it south, to the margin of the great Illinois Coal Field—say to the mouth of Rock river. This would require a land-carriage of from ten to thirty miles, and a water-carriage of about one hundred. The Cornwall ore is transported to a greater distance than this."

In the chapter on coal, Dr. Owen has the following additional remark:—

"The coal in this vicinity (mouth of Rock river) is sure to become valuable, and to be in great demand, for the reduction of such ores, especially copper ores, as are raised in those portions of the district which are deficient in timber. Some town in this neighborhood, or a little further south, is destined to become the *Swansea* of Wisconsin; and to receive, in its numerous furnaces, the rich produce of the prairie mines from the north and northwest."

Dr. John Locke, of Cincinnati, whom, as our readers have seen by a former extract, Dr. Owen had succeeded in engaging on this expedition, a gentleman of well known reputation in various departments of natural science, has added much to the value and interest of the report, by his contributions. His instruments, especially for taking magnetical observations, are said to be superior to those of any other experimental philosopher in America. The tables of barometrical observations, from which are calculated the heights, thickness, and dip of strata, are essential to an accurate appreciation of the value of the mineral region. His numerous magnetical observations will be received by the world of science as an important contribution; and their practical value is well explained by Dr. Owen in the following extract:—

"In Dr. Locke's report, under the head 'magnetical node,' will be found an interesting account of a remarkable magnetical phenomenon, which seems to indicate the presence of some enormous mass of iron, or (if the expression be allowed) some 'subterraneous iron mountain,' which may resemble, except in position, that of Missouri. The locality indicated is on the Wapsepinicon, and the axis of the node, as Dr. Locke's chart shows, is near the line dividing townships eighty-two and eighty-three, and about six miles west of the fifth principal meridian.

"The utility of magnetical observations on the dip and intensity of the needle, as an indication of the presence of protoxide of iron, and perhaps also of great masses of the brown oxide, is undisputed; and I consider myself fortunate in having been able to add to the other materials, whereby to decide the value of the various locations of mineral lands in this district, the delicate and varied experiments of Dr. Locke."

In another portion of his report, Dr. Owen speaks of the experiments made to ascertain whether lead, in any quantity, acts upon the needle.

"I may here add, that it was a matter of much interest, and one which has been fairly and fully tested in the course of this expedition, to decide whether lead, in the greatest masses, exerts any influence upon the needle; and, as a consequent, whether that metal can be magnetically detected.

"It was well known that lead, in any ordinary mass, exerts no perceptible influence on the magnetic needle; but it remained to be proved, whether, in the enormous quantity existing throughout the lead region of Wisconsin, it might not act upon instruments of a construction so peculiarly delicate as those employed by Dr. Locke. No appreciable influence, however, was exerted on the needle, even in the heart of one of the richest mines near Dubuque."

Dr. Locke has also appended to his report some curious charts of mounds raised in former ages in Iowa and Wisconsin, exhibiting a striking resemblance to animals, and evidently intended to represent them; though the species of animal represented is, by lack of precision in these aboriginal artists, left somewhat doubtful. These mounds were carefully examined and measured by Dr. Locke in his intervals of leisure. On this subject, Dr. Owen says:—

"A portion of Dr. Locke's report, including

the interesting chapter on the earthwork antiquities of Wisconsin, however replete with interest to the scientific world, may be considered as touching upon topics, which, according to the strict letter of my instructions, were not embraced therein. In justice to Dr. Locke, to myself, and to the department from which we obtained our commissions, I feel it my duty to state, that these investigations into matters of mere curious research, were made without adding a dollar to the cost, to government, of the expedition. Even the magnetical observations, which have a practical bearing, and cannot be considered supererogatory in the geological examination of a mineral region, were made, with few exceptions, either before the hour when the labor of the day commenced, or by candle-light, when other members of the expedition were wrapped in sleep; or during necessary intervals of rest, when awaiting the reports of a corps, or when unavoidably delayed by any other circumstance. They were not suffered by Dr. Locke to interfere with the other duties intrusted to him, and which he performed as strictly as if these had been his sole avocation. The antiquities were examined, to employ his own words, 'by an enthusiasm which awoke him in his tent at midnight, and sent him into the bleak fields on a November morning to finish the admeasurements of a whole group of figures before the usual time of commencing the labors of the day.'"

"Thus Dr. Locke's contributions to abstract science and aboriginal history are tendered to the department and to the country as a voluntary offering; which if not demanded by official requirements, has not been paid for from the public purse."

This is the true spirit, of economy at once and of enterprise, which ought to characterize a public officer. We are not among the number of those illiberal souls who grudge a single dollar of public money to advance the interests of science; but yet it would be opening a door to abuse, were public agents to be suffered to travel, at will, out of the record of their instructions, to gratify even a laudable curiosity, at a considerable expense, perhaps, to the department by which they are employed. We should be glad, however, to see reasonable latitude permitted, by express instructions, in such an expedition as this, where the interests of science and of the public service so nearly coincide, and where, from the nature of that service, experiments and observations of a character most interesting to science, may be made at a very trifling addition to the already indispensable expense. This is the more desirable as, in explorations like the present, science is a necessary guide to practical results.

From the foregoing observations it will be inferred, that we approve the spirit of the following extract from Dr. Owen's "Remarks in conclusion:"—

"I may remark, that much of what to some may seem abstract scientific research was necessary to enable me to make, with judgement and accuracy, even those formal and apparently mechanical reports, which were transmitted weekly to the respective land offices, and to the General Land Office at Washington City. To search for, and ascertain the value of, the mineral resources of a country, without strictly examining and defining the character and succession of its geological formation, would be like putting to sea without a compass; and in determining that geological character, many things that seem trifles to the uninitiated (the examination of characteristic fossil remains, for example) are of prominent and essential importance.

"I have endeavored, in the conduct of this expedition, and in framing of the present report, to preserve a due medium between a latitudinarian construction of my official instructions, involving an expenditure of public funds for objects not contemplated in the orginal projection of the enterprise, on the one hand; and, on the other, a contracted and illiberal interpretation of the same; an adherence to the letter at the expense of the spirit; which saves without economizing, and destroys the very object of such an expedition, by way of curtailing its indispensable expenses. How far I have succeeded in the endeavor, others must judge."

In an extract already quoted by us, allusion is made to the fact, that several thousand valuable specimens of ores, ore-bearing rocks, fossil remains, soils, &c., were made in the course of the expedition. We heartily concur with Dr. Owen's views in regard to the disposition of the specimens, as here given, from his concluding chapter:—

"I trust that I shall not be considered as overstepping the sphere of my duty, if I suggest the importance, in an economical as well as scientific point of view, of having these specimens arranged in some suitable apartment at the seat of government, as the nucleus of a National Cabinet. Not only the man of science, but the practical miner, would inspect such a collection with deep interest; and it might be the means at once of gratifying laudable curiosity and of stimulating commercial enterprise.

"I doubt whether any other Geological Cabinet, public or private, has its specimens, located with the same minute accuracy as, from the nature of this survey, I have been enabled to locate these; and it is accuracy of location which gives to all geological and mineralogical specimens their chief value."

There is, toward the close of Dr. Owen's report, an interesting chapter on the soils of the explored district. Of these Dr. Owen analyzed fifteen specimens; and found them, unlike the soils of most other mineral regions, generally of a rich quality.

Professor Hitchcock, of Massachusetts, published, in the year 1838, a similar analysis of one hundred and twenty-five specimens of soil, taken as an average throughout that State. Dr. Owen shows, by comparing Professor Hitchcock's table and his own, that the Iowa and Wisconsin soils contain of *geine*, or organic matter, (the ingredient which chiefly imparts to a soil its fertility,) nearly *one-third* more than the average per-centage of the soils of Massachusetts. One specimen of rich valley soil, analysed by Dr. Owen, gave the enormous quantity of *twenty-six* per-cent. of

organic matter, while the average quantity of organic matter contained in the Massachusetts' soils is about *seven and a half* per cent. It is a curious fact, too, and may lead to important practical conclusions, that, so far as these tables extend, the quantity of organic matter in the soils (consequently their probable fertility) is, almost to mathematical accuracy, in the inverse ratio of their specific gravity.

Dr. Owen has also given elaborate analyses of the various ores, ore bearing rocks, coal, &c., found over the district. In a word, he seems to have neglected nothing which could furnish to Congress and to the public generally the means of correctly estimating the extraordinary resources of the region to which his attention was directed.

We trust that this expedition will give encouragement to Congress to prosecute with vigor, and under some well-digested system, the work which has been yet but begun. Between the Mississippi and the Pacific what limitless mines of wealth may be hid A little enterprise on the part of government—an expenditure which may be repaid ten times over by the value of the reservations made at the geologist's recommendation—how much may thus be effected in bringing to light these hidden mines of wealth, many years, even centuries, before they might be discovered or appreciated without such pioneer explorations!

It has occurred to us, that at the same time at which the Public Lands of the United States are surveyed, they might be geologically explored also by attaching to each corps of United States' surveyors a practical geologist. We cannot but think that the expense would be well repaid. A merchant does not think of selling his good suntil he has ascertained their quality. Ought we not upon the same principle, to take measures for discovering the character and value of our Public Lands before we bring them into market?

OBSERVATIONS ON MUSIC.

Under this head in the preceding number we gave a few general remarks on music and musical taste. We know not by whom that article was written, but he is doubtless one whose judgement in matters of taste is not easily biased by the force of popular prejudice. To his excellent observation we purpose here to add a few in ex-

tenso; and we beg the reader to suspend his or ner opinion concerning our *graphic* illustration till we "define our position;" nor take umbrage at the comical appearance of the *artiste* whose full length we have introduced. It is neither a libel nor a burlesque—a caricature nor a fancy sketch—but a genuine portrait of one of nature's true musicians—an amateur whose taste, theory, and practice are beyond criticism, for they are based upon the broad foundation of true sentiment and natural feeling.

Although in harmony of sounds we are *au fait* at neither practice or theory, yet we possess that kind of critical taste inherent in all whose judgements are graduated by the thermometer of feeling. We have frequently thought that the music of the present day exhibits too much of "science"—too much of mechanical precision and formality in its character to answer the great purpose for which it is designed—the awakening of our liveliest sympathies, the elevation of the moral powers and perceptions, and the refinement of those feelings which give the stamp of true nobility to the human character. In nearly all of our musical compositions there appears too much of *art* and too little of *nature;* and hence it is that those songs which abound with sublimity of conception, beauty of diction and precise harmony of versification, are generally far less effective in every circle, than those unpolished ditties or rough national melodies common to all nations and all ages, which hypercritics pronounce to be fit only for the delight of boors.. It is a common error that the high born and educated cannot be pleased with anything short of the most refined expressions and loftiest strains. The susceptibilities of the heart are the same whether that heart beats within a breast clad in the garb of wealth and rank, or the squalid habiliments of poverty, and its emotions in either case are awakened by the same simple process.

The divine impressions of music like the holy influence of religion, must not depend for their permanent and valuable effects upon a taste or feeling formed or engendered by certain conventional rules of society or of education. They must find their way to the heart through the channel of unbiassed feeling, marked out by the hand of nature herself. The music of Orpheus and the songs of Homer captivated the Greeks, not through the superficial displays of *science* but by the deep and powerful effects of pure simplicity of style and words that appealed directly to the sympathies of the heart. In music as in eloquence, to produce the desired effect, the slumbering passions must be aroused. The Athenians listened with pleasure to the eloquence of some of their orators who scattered about them the flowers of rhetoric in profusion, and awarded to them the meed of excellence as beautiful speakers, but when Demosthenes with simple words touched the proper chord, they simultaneously grasped the spear and cried out, "Let us go fight Philip!

The crude war ditties of the Saracens did much to uphold the crescent banner; the songs of the troubadours rang in the ears of the crusaders amid the din of battle; the pibrochs of Scotland marshalled the clans from hill and glen;

"The Swiss and the Frantzmann, the Preuss and the Pole,"

have felt fresh courage when such songs as the "Marseilles Hymn" or the "Tyrolese song of liberty" rose high above the notes of preparation for battle; and, as has been justly remarked, "Rule Brittania" has done more for the English navy, than all British legislation; and the American's heart leaps as his measure is borrowed for—

"The Star-spangled banner, Oh long may it wave
O'er the land of the free and the home of the brave!"

What is true of patriotic melodies, is equally true of those minor productions whose influence is felt in social life, and which awaken the more tender emotions of the soul. They frequently form bonds of union that are indissoluble and draw the heart of the exile irresistibly to his country and kindred. A story is told of a Scotch soldier belonging to a regiment stationed near Buenos Ayres, in South America, that well illustrates this position. He had formed an ardent attachment to a woman of the country, and charmed by the easy life which the tropical fertility of the soil enabled them to lead, he resolved to remain and settle there. When he imparted his resolution to his comrade, the latter did not expostulate with him, but leading him to his tent he placed him by his side and sung with an air well suited to the words, the touching song of "Lochabar no more." The heart of the soldier was touched—the fountain of feeling was unsealed, and as the tear mounted to his eye he murmured thoughtfully, "Lochabar na mair! I maun gang back—Na!" The songs of his childhood were ringing in his ears—the recollection of the delights of home and the pleasures of intercourse with kindred and friends, and every endearment that weds the soul to mortality, flowed in upon his heart as "Lochabar na mair" opened simultaneously the floodgates of memory and feeling, and he left that land of ease and plenty for the bleak rocks and sterile valleys of Badenock, where, when his earthly pilgrimage was ended, he might lay his head near the grave of his mother.

Such is the power of all simple melodies—melodies which are the offspring of true feeling, whether they be of a social or national character; and hence, that lyric poet, and that musical composer who would become exceedingly popular

n his vocation, must make nature his study—must ascertain the relation which certain sounds and articulations bear to certain passions and emotions—in a word, he must study and learn the moral anatomy of the heart and make *science* an auxilliary, not a principal in the successful performance of his task. Such music will please the million who are content to be delighted without taking the trouble to enquire *how* they are delighted. Of such a character was the impassioned music and poetry of the Hebrews, the Greeks, and the minstrels of the middle ages—music and poetry that led every passion captive and present the best authority for the assertion of an eminent writer, "Let me make a nation's songs, and I care not who makes its laws."

A word in relation to our portrait. He is one of those men whose whole soul is imbued with the spirit of music and poetry, yet he can scarcely read a bar correctly, or make two words jingle in rhyme. His viol originates the happiest moments of his existence, and when misfortune clouds his brow with sorrow, he has only to touch its strings, and the sunshine of delight plays over his countenance, and tends more to make a Falstaff of him in size, than a hearty dinner. See what an ecstacy appears in his whole face as he draws the bow across the strings; and how surely we can learn from that index of the feelings, that he is lost in a delightful abstraction. Nor is he alone pleased, but all around him share in his bliss, for his *voluntaries* are in tune with the feeling of himself and audience.

He has placed the note-book behind him, for *science* he eschews as an onerous chain, confining him to certain rules that have naught to do with feeling. As did Goldsmith, in Germany, so might our natural musician, travel over a whole empire and delight crowds wherever he goes, without knowing a single tune measured by the rule of science.

But we would not be understood by these remarks to be opposed to musical science, by any means. We would merely point to what we deem orthodox doctrine, that science should be an *auxilliary* not a *principal* in the labors of the poet and the composer.

[Original.]

ON THE RELIGION AND POETRY OF THE INDIAN CHARACTER.—By J. L. Chester.

I have connected these two terms together because the *religion* of the Indian *is poetry*. They never were and never can be separated. I do not mean, however, that their ideas partook of those vague and dreamy speculations with which both ancient and modern writers have filled their works of romance, and which they have sought to dignify with the appellation of poetry; but the true and substantial essence—the real and undisguised spirit of ideal thought. Neither do I speak of that poetry which consists in rythm and metre—that heterogenous mass of ballad and sound, blank verse and measure heroic; but of that secret and indefinable principle running through every action, thought, and word, ennobling that veneration for a Supreme Being in which they firmly believed, and being itself dignified in return.

And here it may be observed, that the religion of the Indian is just that system which we can well and reasonably believe is the perfection of all human systems, where the mind has been unenlightened by the revelations of the holy scriptures. Take all the various uncivilized nations with which the earth is checkered, and in no instance whatever will you find a total absence of everything like a religious creed. With the majority, the objects of worship are "stocks and stones," with others, whose ideas seem to be more advanced, a spirit, the emblem of which is the sun, becomes the object of adoration; while thousands, yea, millions, bow down in abasement to the beasts of the field and the creeping things of the earth. But it is left to the poor, untutored Indian to cast away all these and to lift his eyes and his heart to that Great Spirit whom he firmly believes overrules his destiny. I am speaking of the character of the *true* Indian, for I well know that there are many tribes which have mixed with the heathen, or worse, with the whites, whose religious creeds are as debasing as those of the islanders of the South Seas. But the true Indian, without the aid of that supernatural light shed from the divine revelations, has found for himself a God, whose attributes, in the abstract, resemble those of Him we worship. And who is this God of the Indian? In his own beautiful and highly poetic language he is "Manitou" or the "Great Spirit," under whose especial guidance every action is performed. They look up to him on every occasion: he gives them success in the hunt and the fight; and, whenever they fail in either, they manifest their confidence in him by the expression that "Manitou is angry with his red children." They recognise their God in the conflicts of the elements: when the red lightning streams through the air, and the loud thunders break over their heads, they are pensive, and should a stray bolt fall upon one in their midst, he is looked upon as an offering by which the anger of their deity is appeased. Ere they proceed upon any excursion, public services

are performed and every endeavor made to induce their God to smile upon their enterprise.

Their religious ideas are undoubtedly crude and sometimes shrouded in mystery, yet not more so than the ideas of the whites; but this is counterbalanced by the universality of their creed. When, among more enlightened nations, the mists of error have been allowed to gather accessions until they have become almost impenetrable clouds, and false creeds are innumerable, the religion of the Indian is one which embraces under its folds every individual of thousands of tribes. There are no infidels in their midst, which fact furnishes the strongest argument that false doctrines and atheistical notions are the result of designing and artful men, and that there is nothing in the law of natural religion which can induce a departure from that belief which says "there is a God."

Of their religious ceremonies it is unnecessary to speak particularly. Suffice it that with the light which they possess they are no more foolish than are the ceremonies of some enlightened christians. The very existence of such ceremonies denotes the existence of a religion, deficient in no respect to ours, save that light by which we are enabled to regulate and keep within the bounds of reason those formalities to which we feel bound to adhere.

Their ideas of the creation, of the flood, and of various important eras in the history of the world are not unreasonable and are decidedly poetic. I have seen many white men living in the very midst of civilized society, whose ideas on these points were far more crude and unreasonable.

But perhaps the religion of the Indian may be seen in its best and strongest light in their ideas of death and a future state. Their views, customs, and ceremonies appear ridiculous to us, but nevertheless are quite reasonable and are full of beauty and meaning. How beautiful the expression, when the Indian, speaking of his dead companion, says "he has gone to the hunting ground of his fathers—Manitou will lead him where the deer and the buffalo abound—his body is cold but his spirit rests in the bosom of Manitou." Firmly believing that the heaven to which "Manitou leads his red children" is an extensive and never failing hunting ground, and that the distance is long, they never fail to inter with the dead body his weapons and a quantity of food to supply his wants on his journey. The ceremonies at and after the burial are not half as idle and disgusting as are those of some nations which are called civilized: witness the wakes and orgies of the Irish.

But the most singular feature in the religion of the Indian is the fear with which they regard "Hobomok," or the "Evil Spirit." They believe him to possess so great a power over them that they sacrifice offerings in order to appease his offended dignity, and in the midst of affliction express the belief that Manitou, offended with them for some cause, has given them into the hands of Hobomok for punishment. Are they not in this more reasonable than the majority of enlightened men, who seem to do all in their power to prevent the evil spirit from losing his grasp upon their souls, and yield themselves willing sacrifices to his demon fires?

A strong parallel may be drawn between the religion of the Indian and that of civilized and enlightened nations. I believe the foundation of both to be the same: in fact, I believe that what is called the christian religion is neither more nor less than the religion of the Indian, (which is emphatically the religion of nature) with those additions and refinements which are the results of more enlightened reason aided by the revelations of holy writ.

A strong contrast may be drawn between the religious character of the Indian and that of enlightened nations. The religion of the Indian is universal; that of the whites partial. Without light he believes in the existence of a supreme being: with the greatest light the latter pretends to deny it. Thus does the poor Indian teach a lesson to those who, in the pride of their attainments, look down upon him with scorn. Which will stand in the highest place on the day when all mankind will be judged according to the light which they possessed, must be left to the result of that trying hour.

Bereavement.—Alas! when we are growing to be old, if we chance to meet a loving heart, the first thought that rises is, that either that one, or else our own, will soon cease to beat—and we refuse to be comforted. The reflection, how many drawn swords hang by a hair over everything we hold dear, should teach us a deeper, sadder and holier affection; yet we, who must soon be parted, love more warmly than the dwellers in eternity.

Marriage.—Queen Christina of Sweden, on the day she resigned the crown, put on her most royal robes, with crown and sceptre, sword and globe. Ladies do the same, when they deck themselves in their best attire, and all their pride of charms, on the day they lay down the sceptre, and tired of reigning over all hearts, content themselves with one.

LEATHER MANUFACTURE.

Of the leather manufacture of Great Britain, McCulloch remarks, that "it ranks either third or fourth on the list, being inferior only,in point of extent, to those of cotton,* wool, and iron, if it be not superior to the latter;" in quoting from Dr. Campbell, (Political State of Great Britain, vol. ii., page 176,) he says: "If we look abroad on the instruments of husbandry, on the implements used in most mechanic trades, on the structure of a multitude of engines and machines, or if we contemplate at home the necessary parts of our clothing, breeches, shoes, boots, gloves, or the furniture of our houses, the books on our shelves, the harness of our horses, and even the substances of our carriages, what do we see but instances of human industry exerted upon leather? What an aptitude has this single material, in a variety of circumstances, for the relief of our necessities, and supplying conveniences in every state and stage of life! Without it, or even without it in the plenty we have it, to what difficulties should we be exposed!"

Of a manufacture which thus enters so largely into the economy of life, and employs such a vast amount of labor, capital, and art, so little statistical information has been given to the public, as to excite surprise. With the exception of some valuable observations and statistical facts, communicated in two lectures before the "Eclectic" Society, by the Hon. Gideon Lee, we have hardly known where to seek for information in regard to the subject, as connected with the manufactures of this country.

It is within the last twenty years that the manufacture of leather, sole-leather more particularly, has risen to high character and importance in the state of New York.

Previous to this period the tanning of leather had been carried on chiefly in Pennsylvania, New Jersey, Maryland, and Delaware, and in the eastern states, Connecticut, Massachusetts, and Vermont, the former tanning *exclusively* with *oak bark*, and the latter *chiefly* with *hemlock*.† Indeed, it may be truly asserted, that the New York market was supplied almost entirely with leather from these different sections of our country; and behold the change: the state of New York has now become the tanning region, the city of New York the great leather market of the Union, and there are more foreign hides imported into the city of New York, than into any other city in the world.

The first effort of consequence made, to establish large tanneries in this state, was by an association of gentlemen, under act of incorporation, styled "The New York Tannery."

The company located their tannery in the town of Hunter, Greene county, twenty miles west of the North river; and after prosecuting the business for a period of five years *unsuccessfully*, were compelled, finally, to close up their affairs, sell their lands and buildings, and abandon to individual enterprise the task of rearing up, and firmly establishing this business in the new region.

The spur, however, had been given, the impulse felt, and long before the company had ceased its operations, many extensive tanneries, capable of competing successfully with those of other states, and rivaling the great incorporated pioneer, had started into existence. Indeed, when we recur to that early period in the history of tanning in this state, and then dwell on the present, we are struck with wonder at the rapid progress and stirring enterprise everywhere exhibited. In every hemlock forest, on every falling stream, and accompanying the interior settlements in every direction, may be seen tanneries, of the largest structure, giving employment to the wood-cutter, the bark-peeler, the teamster, and the wheelwright; and under the consuming fires of their never-glutted "leeches," the forests of hemlock are rapidly giving place for the plough of the husbandman; villages and mills, arising, as by the bidding of an enchanter's wand, where before was the inaccessible waterfall—and Mc-Adamized roads and turnpikes, traversing mountains heretofore deemed impassable.

In noticing the rapidity with which these tanneries have been erected, and their extensive operations, we are enabled to present some facts of interest.

In the region of the "Catskill mountains," the great sole-leather tanning district, and in an extent embraced within the limits of the counties of Greene, Delaware, Schoharie, Sullivan, and Ulster, there were in the year 1820 but three tanneries of any considerable size, and the amouut of leather manufactured in them of trifling importance—in the aggregate, perhaps, 40,000 sides; value, some 100,000 dollars. There are now in the same district, without enumerating many small ones, 56 tanneries of capacity sufficient to manufacture annually 328,000 hides, equal to 656,000 *sides*, or 9,840,000 pounds sole-leather, and in value 1,672,800 dollars!! The rise, progress, and extent of this great branch of industry of the northern and eastern states—the growth of twenty years! What an aptitude of natural advantages to enterprise does it not evidence! We are indebted to no foreign nation for aught save the raw material; to none for capital; to none for skill; to none for the strong arms which have grappled with the mountains, and stripped from their immemorial peaks millions of hemlock; and certainly to none for that energy and perseverance which so particularly distinguish this class of manufacturers.

In the December number (1838) of the Journal of the American Institute, was a brief notice of the "Prattsville Tannery," the largest and most

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* From a summary prepared by the Secretary of State of the commonwealth of Massachusetts, from returns made by the assessors of all the towns and cities, concerning certain branches of industry for the year ending April 1, 1837, we find—

That the value of boots and shoes manufactured in the commonwealth was $14,642,529

Persons employed, 39,068.

Value of cotton goods (next on the list) . 13,056,659

Persons employed, 19,754.

† "It is observable that in this country, wherever the hemlock forests terminate in regions too warm for its production, there the oak forests commence;" consequently, the oak is used in the middle and southern states, almost exclusively, while in the latitudes north of the city of New York the same remark may be applied to hemlock.

extensive in its operations of any in the country; and we deem it not inappropriate, in connexion with the subject under consideration, to give a short history of the tannery and village, and we do this with the more pleasure, as it affords us an opportunity of paying a just tribute to the enterprising character of the founder, the Hon. Zadock Pratt, late member of congress.

Colonel Pratt commenced the world with that sometimes useful companion, *Poverty;* and, after struggling through the early period of his life with the difficulties and embarrassments incidental to such a connexion, he resolved to seek his fortune "farther west." With this determination, he penetrated what, at that period (1824), was deemed almost a wilderness, the interior of the Catskill mountains. A situation on the banks of the Schohariekill presenting to his mind great natural advantages, he resolved to establish himself there. In the incredibly short space of *ninety days*, (we have the fact from himself,) he had his tannery erected, and ready to commence operations.

He then procured a stock of hides* in the city of New York, which he transported over the mountains to his factory, by the most difficult and unbroken roads. In a new country, inconveniences and difficulties presented themselves in every shape—new machinery to be tried, altered, or thrown away, unskilful workmen and laborers to be trained and "broken in," bark to be peeled, and dragged from the mountains. In addition, the stock of leather, injured by negligence or want of skill on the part of his workmen, was returned to a low and glutted market, and forced off at ruinous prices. All these adverse circumstances were enough to discourage him, but did not; they only served to awaken still farther his energies, and stimulate him to renewed exertions. He is now, after the lapse of sixteen years, the proprietor of the largest tannery in America, perhaps in the world, the *purchases and sales* for which have amounted during that period to the immense sum of *two millions and a half of dollars*, in the centre of a beautiful village, numbering in population some thousand inhabitants, containing an academy erected at his own personal cost, and which he now offers to endow with five thousand dollars, conditioned that a like amount be raised by the inhabitants; two handsome churches, which he aided liberally in building, and still continues to help sustain; a carpet and india-rubber manufactory, employing fifty travelling agents; three gristmills, seven sawmills, five shingle machines, six stores, three hotels, four blacksmith shops, and a number of other mechanical trades and professions. With an ample fortune, always ready to assist the industrious, and stimulate them by his advice, his example, and his *protective policy*, (for he encourages every branch of industry in his own village, in preference,) he furnishes forth an illustration of the true "American system," and demonstrates how much can be accomplished by a single individual determined on success.

We have been somewhat minute (we hope not tedious) in the history of this flourishing village, believing that the facts will be of interest to all who take pleasure in viewing the successful progress our country is making in her domestic manufactures; and this is but one of a number of like establishment, not so extensive, perhaps, which have grown up into existence within very few years. Hunt's Merchant's Magazine.

* Colonel Pratt connected his tanning operations with the house of Gideon Lee & Co., in the city of New York, with whom he continued it, for a period of fifteen years, until the senior members of that house retired from active business.

ANECDOTES OF DOGS.

From an interesting work entitled "Natural History of Quadrupeds," we copy the following anecdotes illustrative of the sagacity of the dog:—

"Dr. Elliotson, the learned translator of Blumenbach's Physiology, quotes the following passage from Gall's Treatise on the Functions of the Brain, without expressing any doubt of the circumstance: 'I have often spoken intentionally of objects which might interest my dog, taking care not to mention his name, or make any intonation or gesture which might awaken his attention. He, however, showed no less pleasure or sorrow, as it might be; and, indeed, manifested by his behavior that he had perfectly understood the conversation which concerned him. I had taken a bitch from Vienna to Paris; in a very short time she comprehended French as well as German, of which I satisfied myself by repeating before her whole sentences in both languages.' We have heard an instance of this quickness in the comprehension of language which is very remarkable. A mongrel, between the shepherd's dog and terrier, a great favorite in a farmhouse, was standing by while his mistress was washing some of her children. Upon asking a boy whom she had just dressed to bring his sister's clothes from the next room, he pouted and hesitated. 'Oh, then,' said the mother, 'Mungo will fetch them.' She said this by way of reproach to the boy, for Mungo had not been accustomed to fetch and carry. But Mungo was intelligent and obedient; and, without farther command, he brought the child's frock to his astonished mistress. This was an effort of imagination in Mungo, which dogs certainly possess in a considerable degree. He had often observed, doubtless, the business of dressing the children; and the instant he was appealed to, he imagined what his mistress wanted. Every one knows the anxiety which dogs feel to go out with their masters, if they have been accustomed so to do. A dog will often anticipate the journey of his owner; and, guessing the road he means to take, steal away to a considerable distance on that road to avoid being detained at home. We have repeatedly seen this circumstance. It is distinctly an effort of the imagina-

tion, if, indeed, it be not an inference of reasoning.

"The shying of horses has been considered by some as a peculiar defect of sight; at any rate, it is an effect of some false terror. Dogs fill their imagination with vain fears in the same manner. We have been informed by an intelligent sportsman, that, returning home in the dusk with his pointer, the dog all at once skulked behind him, and refused to advance, in spite of his master's threats. Upon looking toward the horizon before him, the sportsman described what he at first took for a tall man, with a broad hat, extended arms, and a body as thin as a lath. This object, which produced the dog's alarm, was a gigantic thistle, which the gray of the twilight had magnified into fearful dimensions. The credulous once believed that dogs and horses could see spirits, by their often starting without any apparent cause. Such instances as this of the thistle might have given rise to the superstition.

"The faculty by which animals can communicate their ideas to each other is very striking; in dogs it is particularly remarkable. There are many curious anecdotes recorded illustrative of this faculty.

"The following story, which illustrates in a singular manner the communication of ideas between dogs, was told by a clergyman as an authentic anecdote: A surgeon of Leeds, walking in the suburbs of that town, found a little spaniel who had been lamed. He carried the poor animal home, bandaged up his leg, and, after two or three days, turned him out. The dog returned to the surgeon's house every morning till his leg was perfectly well. At the end of several months the spaniel again presented himself, in company with another dog, which had also been lamed; and he intimated, as well as piteous and intelligent looks could intimate, that he desired the same kind assistance to be rendered to his friend as had been bestowed upon himself. A similar circumstance is stated to have occurred to Moraut, a celebrated French surgeon.

"What is generally called the docility of dogs—the faculty of being taught tricks contrary to their natures, is curious, but far from pleasing: the perfection is generally attained by cruelty. It is more agreeable to witness a natural docility; such as that of the shepherd's dog, who learns to distinguish every sheep of a large flock; and who will drive them through the crowded streets with a foresight perfectly wonderful. Some of the finest dogs in the world are those which watch the Merino sheep upon the Spanish mountains. They wear large collars with spikes, to protect them from the attacks of the wolves; and they conduct their flocks with a gentleness which is only equalled by their courage. When they return to the folds, the dogs bring up the stragglers without violence; and the man walks at their head in the true pastoral style so beautifully described in the Psalms: 'The Lord is my shepherd; I shall not want. He maketh me lie down in green pastures; he *leadeth* me beside the still waters.'"

"We have alluded to those exhibitions of remarkable attachment between animals of opposite natures, which are sometimes so interesting in menageries. These attachments are more frequent with dogs than with other animals, probably because they are more capable of attachment. The friendship between dogs and horses is too common to attract notice; but every now and then we hear of an attachment where we might have expected an antipathy. Dr. Fleming, in his interesting book, 'The Philosophy of Zoology,' quotes from Montague's supplement to his Ornithological Dictionary the following account of a singular friendship, which subsisted between a China goose and a pointer which had killed the gander. 'Ponto (for that was the dog's name) was most severely punished for the misdemeanor, and had the dead bird tied to his neck. The solitary goose became extremely distressed for the loss of her partner and only companion; and, probably, having been attracted to the dog's kennel by the sight of her dead mate, she seemed determined to persecute Ponto by her constant attendance and continual vociferations; but, after a little time, a strict amity and friendship subsisted between these incongruous animals. They fed out of the same trough, lived under the same roof, and in the same straw bed kept each other warm; and when the dog was taken to the field, the inharmonious lamentations of the goose for the absence of her friend were incessant.'"

TWILIGHT MUSINGS.

The Boston Weekly Magazine publishes the following beautiful lines from the pen of the late B. B. Thatcher. They were written some years ago—but were corrected and prepared for the press only the day previous to his death—being his last literary effort:—

Beautiful evening! my bewildered brain
And aching bosom, with fond orisons, bless
The coming of thy shadows—faint with pain,
And yearning for the hours of quietness
That follow in the twilight. The fair morn
Unfurls o'er eastern hills her dolphin dies—
But, oh! majestic Eve! to thee I turn
With heart enchanted, and undazzled eyes.
Give me to breathe thy fragrance. When the dews
Clasp with their delicate arms the violet bell,
Give me to wander where the stream does choose
Its murmuring journey down the dim green dell,
With chary daintiness. Then would I bow
Unto thy silver glories, as before
The Persian worshipped—with a better vow,
And a diviner spirit, than of yore.
Then grant me thy communion. Swell my soul
With the sweet awe of silence. Look on me,
With the bright stars of the resplendent pole—
And let me learn *their* teachings. I shall be
A worshipper of Heaven. I shall dream
Of the high land I long for. I shall see
The stirring of the myriad palm-boughs, and
Of seraph's pinions. From the boundless throng
Of the unnumbered holy, I shall hear
Faintly the choral anthem.——So the song
Of ocean's surges falls upon the ear
Of slumbering mariner—and so the bird
That loves the sombre night, o'er the far wave is heard.

JOEL—From the Frescoes by Michael Angelo in the Sistine Chapel.

IN a well-written biographical sketch of Michael Angelo Buonarotti, contained in the two preceding numbers of the Magazine, we introduced several portraits of the most eminent of the Jewish Prophets, which that great artist painted in fresco in the Sistine chapel at Rome. We are enabled to give three more, but regret the necessity which compelled us to omit the introduction of them in connexion with the others, in the article alluded to. But we trust they will be none the less acceptable to many of our readers, to whom a brief notice of their lives and characters, may be interesting.

ISAIAH.

Like nearly all the other Jewish prophets, the history of Isaiah is enveloped in obscurity, and we know him only through the feeble aid of tradition and the transcendant beauty and sublimity of his prophetic poetry. If we may rely upon tradition, supported by a few Scriptural facts, it appears probable that he was the grand-son of Joash king of Judah, and nephew of king Uzziah. He performed the prophetic office during the reigns of Uzziah, Jotham, Ahaz and Hezekiah, embracing a period of about forty-eight years. Some, both Jews and Christians, have traditions and believe, that he lived till the time of the "bloody Manasseh," and suffered martyrdom at his hands by being sawn asunder. If this be true, then Isaiah performed the duties of a prophet for upward of sixty years. He flourished about seven hundred years before Christ. Isaiah has been termed the prince of prophets, and he may be justly ranked among the most eminent poets of antiquity. Bishop Lowth says, "Isaiah, the first of the prophets, both in order and dignity, abounds in such transcendant excellencies, that he may properly be said to furnish the most permanent model of prophetic poetry. He is at once elegant and sublime, forcible and ornamented; he unites energy with copiousness, and dignity with variety. In his sentiments there is uncommon elevation and majesty; in his imagery, the utmost propriety, elegance, dignity, and diversity; and notwithstanding the obscurity of his subjects, a surprising degree of clearness and simplicity. To these we may add, there is such sweetness in the composition of his sentences, that if the Hebrew language is at present posses

Jonah—From the Frescoes by Michael Angelo in the Sistine Chapel.

sed of any remains of its native grace and harmony, we shall chiefly find them in the writings of Isaiah."

Jeremiah.

Jeremiah was a native of Anathoth, a city of the tribe of Benjamin not far from Jerusalem and devoted to the use of the priests. His father was a priest named Hilkiah, (not the high-priest of that name.) Jeremiah was very young when called to the prophetical office, in which he was engaged during a period of forty-two years. He early predicted ruin to his country, and lived to see his predictions fulfilled. During the troubled reign of Josiah, the Jews, contrary to the remonstrance of the prophet, withdrew into Egypt, and took him with them. There he exercised all his characteristic zeal in reproving them for their idolatries into which they soon fell when coming in contact with the heathen; and there is an old tradition, that his freedom and zeal cost him his life, the Jews at Tahphanes taking such offence at his rebukes, that they stoned him to death. Alexander the Great, it is said, when there, visited his tomb, and was induced to remove his remains to Alexandria, where he erected over them a magnificent monument. This assertion rests upon the authority of tradition alone. Jeremiah flourished about six hundred years before Christ.

Ezekiel.

Ezekiel was of the sacerdotal race, and was one of the captives carried away to Babylon, by Nebuchadnezzar, at the same time with king Jehoiachin. He began to prophesy in the fifth year of his captivity, and continued his labors for about twenty-two years. He prophesied in Mesopotamia, contemporaneously with Jeremiah in Judea.

A few miles southeast of the ruins of Babylon, is a tomb which for ages has been pointed out by the resident Jews, as the resting place of the mortal remains of Ezekiel. It is well ascertained that he lived upon the banks of the Khabour or Chebar, and it is generally believed that he died while on a visit to the capital. The alleged tomb of Ezekiel is still looked upon with great reverence by the inhabitants of Western Asia, especially the Bedouins and other dwellers in the desert and upon its borders. The Jews have a

synagogue near it and upon the sepulchre of the prophet, they formerly kept a lamp continually burning.

Daniel.

Daniel was considered by the Jews, as one of the most renowned of all the prophets, and they even gave him the name of Prince of Prophets. He was in the first band of Hebrew captives that were carried to Babylon about seven years before Ezekiel was taken thither. He is supposed to have been about twenty years of age when that event took place, soon after which time he commenced prophesying, and continued his labors in that field for more than seventy years.

Of the parentage of Daniel, nothing positive is known, but it is generally believed by the Jews that he was a descendant of king Hezekiah. He was chosen to attend upon the person of the Babylonian monarch, and received instruction in all the varied learning of the Chaldees. Unlike the other prophets, his life was one of temporal prosperity and honor, marred only by a few trials caused by the malicious envy of courtiers. It appears that he was in great favor at the court of the Assyrian and of the Persian, from the time that he interpreted the hand-writing upon the wall, in the banqueting chamber of Belshazzar till his death, which event occurred when he was about ninety years of age. He survived the period of the captivity of the Jews, but it does not appear that he returned with them to Jerusalem. It is not agreed by the Rabbins, where the prophet died, some asserting that it was at Babylon, others at Susa. The history in detail of this prophet may be found in the book that bears his name.

Joel.

This prophet was of minor rank yet highly esteemed by the Jews. Total obscurity veils his history so far as a certain knowledge is concerned; though it is reported on rather doubtful authority, that he was of the tribe of Reuben, and a native of Bethoron. He prophesied much earlier than any of the other prophets, except Jonah, who preceded him about a half a century.

Jonah.

Jonah was a native of Goth-hepher, a town of Zebulon. He lived and prophesied in the reign preceding that of Jeroboam about eight hundred and fifty years B. C. He is considered the earliest of all the other prophets (Samuel excepted) whose time can be accurately ascertained. His labors in the prophetic vineyard do not appear to have been very extensive, and we have no account of him after the transactions recorded in the book that bears his name. Some suppose that after his mission to Nineveh, he returned to his own country, and soon after died there; but the people of Mesopotamia contend that he died at Nineveh, and a tomb situated near the site of that ancient city, is alleged to be that of the prophet. In the time of Jerome, a tomb claimed to be that of Jonah, existed at a place near Sepphoris on the road to Tiberias, and this, other eminent Christian writers and travellers, claim to be the real one. Near this spot, the Moslems (who have a version of Jonah's prophecy in the Koran, and who venerate his name) built a mosque. In several places in the Koran, Jonah or Jonas, is mentioned as a bright example.

In our next number we shall give our last illustration, from Angelo's frescoes. It is the prophet Zechariah; and with the engraving of his person we shall introduce another of his tomb, with other sepulchres, situated in the valley of Jehosaphat. In this brief notice of the "seers of ancient days," we have included those only of whom we have given graphic illustrations.

Coral Reefs and Coral Islets.

Few natural objects are so well calculated to excite wonder in the human mind as the coral constructions, in all their Protean forms, that surround the greater number of the Polynesian islands, and which demonstrate so perfectly the power of nature to effect her vast designs through apparently, inefficient and feeble agents. It requires, indeed, an intimate acquaintance with the habits of the lithophites, and ocular proof of their labors, to credit that stupendous sub-marine reefs, and islands many miles in circumference, are indebted at least, for their entire visible structure, to the secretory economy of these tiny architects. In such examples Raiatea is not deficient. On the contrary, she is indebted for a large share of her natural beauties, as well as commercial advantages, to the coral fabrics which surround her shores. These chiefly obtain in the form of reefs, of which the nature and use may be best understood by considering them under their natural divisions of a *barrier* and a *reef shore*. The former encircles the island, as a break-water, or sea wall, at a distance of one and a half or two miles from the land, presenting a precipitous face to the ocean, to receive the assault of its billows, but encroaching, in a superficial and capricious manner, upon the lagoon water it encloses. The shore-reef is continuous with the land around the entire coast, and stretches into the sea to a variable, but, usually, to a very considerable distance. Its greater portion is covered with shallow water, which, in many parts, does not exceed, and is often less, than a foot in depth. Its outer margin shelves irregularly, and terminates abruptly in a deep channel of blue water. This channel, which is also con-

tinued round the island, furnishes a natural division between the two reefs, as well as a convenient passage for navigation. Coral islets, shoals, or whatever other form the madreporic rock may assume, can be distinctly traced to one or the other of these apparently distinct reefs, but never occur as the productions of both conjointly. The outer, or *barrier reef*, resembles a wall, no less in structure than in its office. Unlike the friable and arborescent material we commonly associate with the name of coral, the rock of which it is composed is hard, compact, and amorphous, bearing much resemblance to a very firm cement; and it is only on its shoals, extending towards the land, that we notice the elegant form of the tree-coral contrasting strongly with the rocky and unornamented structure on which it is planted as to justify a doubt if both are constructed by the same animals. The summit of this reef is flat, several yards in breadth, but little raised above the sea, and washed by a heavy surf, which breaks against its sea-aspect, courses over its level surface and falls gently, and, as it were, by a line of cascades, into the placid basin on the opposite side. At ebb-tide when the surf is less in amount, this reef is partly dry and accessible; but when the tide is high, or the weather tempestuous, the sea, raised into lofty and magnificent arches, beats over the rocky barrier with terrific grandeur, and with a rolling or thundering sound, which may be heard on a tranquil night, at the distance of several miles. To persons unaccustomed to such scenes, nothing is more deeply and agreeably impressive than the view of a majestic surf thus lashing the coast of an island opposed to the play of a mighty ocean; although it is comprehensible or revolting to a sailor, to hear beauty associated with a scene which only conveys to his mind anxious and unpleasant reflections. A curious and mysterious feature in the construction of the barrier-reef is presented in the occasional apertures that exist in its fabric, and which are of sufficient breadth and depth of water to permit ships to sail through them with facility. * * The shore-reef is chiefly composed of umorphous rock or block-coral, though tree-coral is also abundant upon it, as well as extensive beds of sand. In many parts where the water is deep, it presents a sub-marine picture of extreme beauty: extensive coral groves, planted in beds of smooth and white sand, and mingling hues of pink, blue, white, and yellow, appear through the transparent sea; numerous small fish, of brilliant colors, glide over the sands, thread the labyrinths of the coral branches; or when alarmed, dart rapidly for shelter into the recesses of the stony thickets: the whole affording a peculiarly pleasing and almost kaleidoscopic effect. There is, however, no feature in the scenery of this coast that strikes the European observer as more novel and lovely than the verdant islets or motus, which strew the expanse of a smooth sea between the barrier-reef and the main land. They are composed entirely of coral; are raised scarcely three feet above the level of the surrounding water; and appear to be peculiar to the barrier-reef. They are most usually based upon the shoals which constitute the lateral boundaries of the reef apertures. It is probable that they are formed from mature coral shoals, which, after they had been raised to the surface of the sea, had caused the water to recede from their centre by the increase and elevation of their circumference: the near approach of a circular form they invariably present, being in favor of this supposition. A motu may occasionally be seen in an incipient state: a shoal with little depth of water, projecting but a few superficial feet of its centre above the sea, rocky, and covered with two or three stunted bushes struggling for existence, affording a structure intermediate to an inundated shoal and a complete islet. The more extensive and ornamental motus possess some rich vegetable mould, covered with brushwood, or cocoa nut and other litoral trees. They are destitute of fresh water; and none of them are inhabited, except by occasional visitors from the main land, who repair hither for the benefit of the purer air, when suffering from sickness.

SCIENTIFIC NOTICES.

KREOSOTE.

Kreosote is present in crude pyroligneous acid, but is most conveniently obtained from that part of the oil distilled from wood-tar, which is heavier than water. Kreosote was discovered by Dr. Reichenbach in the year 1832; and there can be no doubt that the process for obtaining this substance will be greatly abridged, when chymists are better acquainted with its properties. In its pure state, kreosote is a colorless, transparent, oily liquid, somewhat heavier than water; it has an oily feeling, and leaves a greasy stain on paper, which stain disappears after some time; its odor is peculiarly penetrating and disagreeable, like that of oversmoked meats; when applied to the tongue, it produces great pain and corrodes it; the taste is burning and caustic, exciting a flow of saliva, and leaving an impression of sweetness. Kreosote evaporates on exposure to light and air. It boils at three hundred and ninety-seven degrees, and retains its fluidity at seventeen degrees; that is, at forty-nine degrees below the temperature at which ice melts. It has an unusual degree of refrangibility, and, when diffused in thin films, it displays very vivid and beautiful colors. It can be distilled without change; and, when used with a wick instead of oil, it burns with a strong sooty flame. It does not conduct electricity; it is neither acid nor alkaline, but united with some acids and alkalis. It is soluble in eighty times its own bulk of water, but is freely soluble in alcohol and ether. It is decomposed by nitric and sulphuric acids. A singular property of kreosote is that of instantly coagulating albumen; such for example, as the white of an egg. A considerable quantity of albumen exists in the blood of animals; hence the value of kreosote as an external application in stopping the flow of blood, from wounds, leech bites, &c. It has also

been found useful in many cutaneous diseases; but great care is necessary in its application; for, being a powerful poison, it may produce death by being absorbed into the system. When considerably diluted, it is given as an internal remedy in cases of nausea, sea-sickness, &c.; and it is said to create a sensation of warmth in the stomach; if the dose be repeated at short intervals, it produces intoxication. Animals, fishes and insects, plunged into a very dilute solution of kreosote, die immediately in strong convulsions, and most plants are killed by being watered with this solution. Kreosote is truly admirable as a remedy for the toothache, that is, in such cases where the pain is occasioned by decayed teeth; and it has recently been applied with success in certain cases of deafness. But there is no property of kreosote so valuable and remarkable as that from which it derives its name, viz. its antiseptic property. The term is derived from two Greek words, signifying *preserver of flesh*. Wood-smoke has long been employed in curing and flavoring hams, tongues, sausages, together with many kinds of fish, as the spacious chimneys of our farm-houses amply testify. Now it has been shown, that the antiseptic property of wood-smoke is due to kreosote obtained from the wood fuel, in the process of burning. In anatomical preparations kreosote has been employed with singular success; and the addition of a few drops of kreosote to the spirit of wine, in which such preparations are preserved, is of the greatest efficacy. In stuffing birds, and in other illustrations of natural history, there can be no doubt of the advantage of employing this useful article. The application of tar as a preservative of timber, cordage, &c. is very great; its efficacy in this respect is due almost entirely to the presence of kreosote. A solution of kreosote in water exhibits antiseptic properties surpassing those of pyroligneous acid. Fresh meat, on being soaked for half an hour in kreosote water, may be exposed to a summer's sun for days together without acquiring any taint; on the contrary it becomes dry and hard, and has the flavor of good smoked meat. Such meat, however, should not be boiled, because the flavour by that means becomes unpleasant; it may be eaten uncooked, after the German fashion, or it may be broiled or toasted. A few drops of kreosote to as many gallons of ink will effectually prevent mouldiness. When added to whiskey, it gives it the *peat* flavor; and we may state that a large quantity of the so-called "genuine" Hollands, sold in London, is nothing more than gin, or cheap whiskey, with the addition of kreosote.

IMPORTANCE OF PURE AIR.

Change of air is not more valuable as a remedy in the cure of disease and its consequences, than as a preventive of disease, more especially in childhood and youth. At this tender and susceptible period of life, the rapid influence of the atmosphere in which we live in deteriorating or improving the health is very remarkable, a change of a few weeks from the country to a large town being sufficient to change the ruddy, healthy child, into a pale, sickly-looking creature; and vice versa. The comparative influence of a town and country air on the health of children is seen in a striking manner in the families of the higher ranks of society, who spend a considerable part of every year in town. Children should never be reared in large towns when this can be avoided; and, when unavoidable, they should be sent during a part, at least, of every summer into the country—which is, indeed, the proper place for children—until their system has acquired sufficient strength to resist the injurious effects of city life. When they cannot have this advantage, we consider it the duty of the medical attendants of families to urge a temporary annual residence in the country as essential to the health of children, more particularly those who are delicate. How many neglect this valuable means of improving the health of their offspring who have it in their power, and would willingly adopt it were they aware of its importance! So strongly, indeed, are we impressed with the value of this measure from ample observation, that we consider parents in town, who have the means of giving their families the advantage of country air, and neglect it, deficient in one of their chief duties. To young females who, by the habits of society, are much more confined to the house than boys—a temporary annual residence in the country becomes a measure of still greater importance, and should be continued, at least, to the full period of their growth. We have reasons to believe that the advantages of country air to the young and delicate are not yet sufficiently appreciated by the profession; and we are, therefore, anxious to call their attention to it, that they may use their influence with the public, upon whose minds, if they succeed in impressing the full value of pure air, they will be the means of contributing greatly to the health of the rising generation.

ECONOMY OF GAS.

A flame, consuming one-fifth of a cubic foot of gas per hour, will burn in a chamber, and not be liable to be extinguished by the opening and shutting of doors; and, if due precaution be used, a flame may be preserved with a consumption only of one-eighth, or one-tenth of a foot per hour.

PREPARED CHARCOAL FOR FUEL.

Charcoal, broken into small pieces, and steeped in a mixture composed of two gallons of water, one pound of quick-lime, and ten ounces of salt, can be burnt at a slow rate, without the evolution of carbonic acid gas being sensible. It is known that lime will never absorb more than from sixty-two to sixty-four per cent. of the carbonic acid gas of which it is deprived by burning: also, one pound of charcoal will during combustion, produce as much carbonic acid gas as can be absorbed by three pounds of lime.

EFFECTS OF LAUGHTER ON HEALTH.

Laughter, says Hufeland, is one of the greatest helps to digestion with which I am acquainted; and the custom prevalent among our forefathers of exciting it at the table by jesters and buffoons,

was founded on true medical principles. In a word, endeavor to have cheerful and merry companions at your meals; what nourishment one receives amid mirth and jollity will produce good and light blood.

DESCENT OF SPIDERS.

A letter from Sukkur, on the Indus, dated 17th September, mentions the following phenomenon: "I was taking a stroll into the fields, when I found myself suddenly covered with a whole host of small and large spiders. On looking about, I observed that I was standing in the midst of a large cloud of these animals, who appeared descending in a filmy web of no small dimensions, from the upper region. Having extricated myself with some difficulty from their embraces, I took a position from whence I could see about me, without being annoyed by them, and to my astonishment I beheld descending, maze within maze, and fold within fold, an innumerable host of spiders, all suspended and dancing on their tiny threads, which were at times seen to glance in every variety of shade, amid the beams of the rising sun. The morning was somewhat dark and louring, and the stillness was now and then broken by the distant rumbling of thunder."

PHILOSOPHY AND CONSISTENCY.

THERE is a vast amount of true philosophy exhibited in the following article from the pen of Mrs. Child; and it should be well considered by every person when setting out upon the great journey of life.

"Among all the fine things Mrs. Barbauld wrote, she never wrote anything better than her essay on the Inconsistency of Human Expectations. 'Everything,' says she, 'is marked at a settled price. Our time, our labour, our ingenuity, is so much ready money, which we are to lay out to the best advantage. Examine, compare, choose, reject; but stand to your own judgement; and do not, like children, when you have purchased one thing, repine that you do not possess another, which you would not purchase. Would you be rich? Do you think *that* the single point worth sacrificing everything else to? You may then be rich. Thousands have become so from the lowest beginnings by toil, and diligence, and attention to the minutest articles of expense and profit. But you must give up the pleasures of leisure, of an unembarrassed mind, and of a free, unsuspicious temper. You must learn to do hard, if not unjust things; and as for the embarrassment of a delicate and ingenuous spirit, it is necessary for you to get rid of it as fast as possible. You must not stop to enlarge your mind, polish your taste, or refine your sentiments; but must keep on in one beaten track, without turning aside to the right hand or the left. 'But,' you say, 'I cannot submit to drudgery like this; I feel a spirit above it.' 'Tis well: be above it then; only do not repine because you are not rich. Is knowledge the pearl of price in your estimation? That too may be purchased by steady application, and long, solitary hours of study and reflection. 'But,' says the man of letters, 'what a hardship is it that many an illiterate fellow, who cannot construe the motto on his coach, shall raise a fortune, and make a figure, while I possess merely the common conveniences of life.' Was it for fortune, then, that you grew pale over the midnight lamp, and gave the sprightly years of youth to study and reflection? You then have mistaken your path, and ill employed your industry. 'What reward have I then for all my labour?' What reward! A large comprehensive soul, purged from vulgar fears and prejudices, able to interpret the works of man and God. A perpetual spring of fresh ideas, and the conscious dignity of superior intelligence. Good Heaven! What other reward can you ask! 'But is it not a reproach upon the economy of Providence that such a one, who is a mean, dirty fellow, should have amassed wealth enough to buy half a nation?' Not in the least. He made himself a mean, dirty fellow, for that very end. He has paid his health, his conscience, and his liberty for it. Do you envy him his bargain? Will you hang your head in his presence, because he outshines you in equipage and show? Lift up your brow with a noble confidence, and say to yourself, 'I have not these things, it is true; but it is because I have not desired, or sought them; it is because I possess something better. I have chosen my lot! I am content, and satisfied.' The most characteristic mark of a great mind is to choose some one object, which it considers important, and pursue that object through life. If we expect the purchase, we must pay the price.'

"There is a pretty passage in one of Lucian's dialogues, where Jupiter complains to Cupid, that, though he has had so many intrigues, he was never sincerely beloved. 'In order to be loved,' says Cupid, 'you must lay aside your ægis and your thunderbolts; you must curl and perfume your hair, and place a garland on your head, and walk with a soft step, and assume a winning, obsequious deportment.' 'But,' replied Jupiter, 'I am not willing to resign so much of my digity.' 'Then,' returned Cupid, 'leave off desiring to be loved.'

"These remarks by Mrs. Barbauld are full of sound philosophy. Who has not observed, in his circle of acquaintance, and in the recesses of his own heart, the same inconsistency of expectations the same peevishness of discontent.

"Says Germanicus, 'There is my dunce of a classmate has found his way into Congress, and is living amid the perpetual excitement of intellectual minds, while I am cooped up in an ignorant country parish, obliged to be at the beck and call of every old woman, who happens to feel uneasy in her mind.'

"Well Germanicus, the road to political distinction was as open to you as to him; why did you not choose it?' 'Oh, I could not consent to be the tool of a party; to shake hands with the vicious, and flatter fools. It would gall me to the quick to hear my opponents accuse me of actions I never committed, and of motives which

worlds would not tempt me to indulge.' Since Germanicus is wise enough to know the whistle costs more than it is worth, is he not unreasonable to murmur because he has not bought it?

"Matrona always wears a discontented look when she hears the praises of Clio. 'I used to write her composition for her, when we were at school together,' says she; 'and now she is quite the idol of the literary world; while I am never heard of beyond my own family, unless some one happens to introduce me as a friend of Clio.' 'Why not write, then; and see if the world will not learn to introduce Clio as the friend of Matrona?' 'I write! not for the world! I could not endure to pour my soul out to an undiscerning multitude; I could not see my cherished thoughts caricatured by some soulless reviewer, and my favorite fancies expounded by the matter-of-fact editor of some stupid paper.' Why does Matrona envy what she knows costs so much, and is of so little value?

"Yet so it is, through all classes of society. All of us covet some neighbour's possession, and think our lot would have been happier, had it been different from what it is. Yet most of us could obtain worldly distinctions, if our habits and inclinations allowed us to pay the immense price at which they must be purchased. True wisdom lies in finding out all the advantages of a situation in which we *are* placed, instead of imagining the enjoyments of one in which we are *not* placed.

"Such philosophy is rarely found. The most perfect sample I ever met was an old woman, who was apparently the poorest and most forlorn of the human species—so true is the maxim which all profess to believe, and which none act upon invariably, viz. that happiness does not depend on outward circumstances. The wise woman, to whom I have alluded, *walks* to Boston, from a distance of twenty-five or thirty miles, to sell a bag of brown thread and stockings; and then patiently foots it back again with her little gains. Her dress though tidy, is a grotesque collection of 'shreds and patches,' coarse in the extreme. 'Why don't you come down in a wagon?' said I, when I observed that she was soon to become a mother, and was evidently wearied with her long journey.' 'We h'an't got any horse,' replied she; 'the neighbors are very kind to me, but they can't spare their'n; and it would cost as much to hire one, as all my thread will come to.' 'You have a husband—don't he do anything for you.' 'He is a good man; he does all he can; but he's a cripple and an invalid. He reels my yarn, and *specks* the children's shoes. He's as kind a husband as a woman need to have.' 'But his being a cripple is a heavy misfortune to you,' said I. 'Why, ma'am, I don't look upon it in that light,' replied the thread-woman; 'I consider that I've great reason to be thankful he never took to any bad habits.' How many children have you?' 'Six sons, and five *darters*, ma'am.' 'Six sons and five daughters! What a family for a poor woman to support!' 'It's a family, surely, ma'am; but there an't one of 'em I'd be willing to lose. They are as good children as need to be—all willing to work, and all clever to me. Even the littlest boy, when he gets a cent now and then for doing a *chore*, will be sure and bring it to ma'am.' 'Do your daughters spin your thread?' 'No, ma'am; as soon as they are old enough, they go out to *sarvice*. I don't want to keep them always delving for me; they are always willing to give me what they can, but it is right and fair they should do a little for themselves. I do all my spinning after the folks are abed.' 'Don't you think you should be better off, if you had no one but yourself to provide for?' 'Why, no, ma'am, I don't. If I had'nt been married, I should always have had to work as hard as I could; and now I can't do more than that. My children are a great comfort to me; and I look forward to the time when they'll do as much for me as I have done for them.'

"Here was true philosophy! I learned a lesson from that poor woman which I shall not soon forget. If I wanted true, hearty, well-principled service, I would employ children brought up by such a mother."

THE WIDOW'S CHARGE AT HER DAUGHTER'S BRIDAL.—Mrs. Sigourney.

Deal gently, thou, whose hand has won
The young bird from the nest away,
Where careless 'neath a vernal sun
She daily carol'd day by day—
The haunt is lone—the heart must grieve,
From whence her timid wing doth soar,
They pensive list, at hush of eve,
Yet hear her gushing song no more.

Deal gently with her—thou art dear
Beyond what vestal lips have told,
And like a lamb, from fountain clear,
She turns, confiding to the fold;
She round thy sweet domestic bower,
The wreaths of changeless love shall twine,
Watch for thy step at vesper hour,
And blend her holiest prayer with thine.

Deal gently, thou, when far away,
'Mid stranger scenes her foot shall rove,
Nor let thy tender cares decay,
The soul of woman lives in love;
And shouldst thou, wondering, mark a tear
Unconscious from her eyelid break,
Be pitiful, and soothe the fear
That man's strong heart can ne'er partake.

A mother yields her gem to thee,
On thy true breast to sparkle rare—
She places 'neath thy household tree
The idol of her fondest care;
And by thy trust to be forgiven,
When judgement wakes in terror wild,
By all thy treasured hopes of Heaven,
Deal gently with the widow's child.

Of all the actions of a man's life, his marriage does least concern others; yet of all the actions of our life, it is the most meddled with by other people. Marriage is a desperate thing. The frogs of Æsop were extremely wise: they had a great mind for some water, but they would not leap into the well because they could not leap out again.

FARMERS' DEPARTMENT.

GOOD HUSBANDRY.

The editor of the Maine Cultivator tills but a single acre of land; but this he does in such a manner as to obtain from it an astonishing amount of produce.

One third of an acre he devotes annually to corn—the long-eared, large-kerneled, eight-rowed yellow corn, that is not very early and not very late. With him, it has ripened every year for the last ten years that he has cultivated it. The soil he makes rich. He applies to it, before ploughing, at the rate of eighteen or twenty cords of long manure to the acre, (or six to the third of an acre) and turns it under by the plough. He plants the hills three feet and a half apart one way, and three feet the other, *exactly*, by measurement with a line. In each hill he deposits either a shovelful of old, rotten, hog manure, or as much light manure as will not over-stimulate the crop. From this third of an acre he has realized, on the average, for years, over thirty bushels of sound corn for grinding, besides a little gig corn for hogs in the fall of the year. This is as much corn as he needs in his family, beside a sufficient surplus for fattening one large or two small hogs. From the same land, he ordinarily obtains some two or three hundred pumpions, which serve important purposes in the family, besides being an excellent article for boiling up with the hogs' potatoes, giving a cow, &c. From the same land, too, he has generally obtained all the dry white beans he has needed in his family to go with his pork, which he raises by the avails of his land, without purchasing of others. The corn fodder is carefully cut and cured, and helps as a subsistence for the cow. So much for *one third* of an acre.

A small portion of land is set apart for the culture of onions. Ordinarily he raises from fifty to seventy bushels on a bed, say half a dozen rods square. These he sells on the average at one dollar per bushel—say for sixty dollars per year. This purchases his flour and rye, at common prices. So that from the first third of an acre, and an onion bed, he raises all his bread—brown and white.

On two other large beds, he grows generally about fifty bushels of mangel-wurtzel and carrots. These are for the cow's winter provender. They more than pay for themselves in the milk and butter—to say nothing of the saving of hay and other provender. With a very little hay, together with the corn fodder and roots, a good cow (and he finds it economy always to keep the *best*) may be kept through the winter.

Potatoes, for summer and autumn use, are planted on the margins, and wherever there is a vacant chance for a hill; and a department is expressly devoted to them, large enough to raise all that are wanted for the table, and enough to spare for the hogs, &c.

So far relates to bread, butter, pork—and we might add, poultry.

Then the rest of the land is devoted to—too many things to mention here: beets, parsnips, cabbages, turnips, green beans, peas, green corn, cucumbers, melons, squashes—summer and winter sorts—&c. &c. besides fruits and flowers of various kinds: grapes, Antwerp rasperries, black do.; currants—white, red, black, and yellow; English and common gooseberries; and a few choice apple, pear, plum, cherry, peach, and quince trees. All this from a *single acre*, which he cultivates mostly with his own hand.

Poughkeepsie Telegraph.

HOW TO MAKE FARMING PROFITABLE.

The great secret of success in the cultivation of the earth, is thus explained by Judge Buel, (late editor of the *Albany Cultivator*,) in the address which he prepared for delivery in Connecticut, just before his death.

The alternating system of husbandry has not obtained among us that consideration which its importance demands. It is well known that ordinary lands will not bear a succession of the same crops without a successive diminution of product; and that if grain, grass and roots are alternated, or succeed each other, the decrease of fertility is much less apparent. This is ascribed to the well authenticated fact, that different plants exhaust different fertilizing properties of the soil, or in other words, that each species requires a specific food, which other species do not take up. It is now generally conceded that wheat will not do well in a soil which has no lime in its composition—that clover and lucerne require gypsum—that flax cannot be raised on the same ground oftener than once in six or eight years, with advantage. These facts are explained upon the ground that in analyzing wheat, it is found to contain lime; clover, on analysis, has yielded gypsum at the rate of four bushels to the acre; and the supposition is, that a crop of flax exhausts the soil of some property essential to its perfection, which it takes years to restore. The crops can derive these supplies from no other source than the soil; and if the supplies are not there, the crop will be deficient or defective.

There is still another reason to offer for alternating crops. The soil, if in grass, becomes annually more hard and compact; the roots are consequently restricted in their range for food, the heat and atmosphere become partially excluded, and the decomposition of vegetable food is arrested. The consequence is, that the finer grass gradually disappears, or runs out, as it is termed, and the grass crop gradually diminishes. If ploughed and cropped occasionally with roots, these inconveniences are obviated; the soil is broke and pulverized, and rendered pervious to solar and atmospheric influence, and the vegetable food which it contains, is thereby rendered solvable; and if manure is given to the tillage crops, as it should, and can be once during the course, the soil will become renovated, and fitted again to receive the grass seeds, with the prospect of a greatly increased burthen of hay.

The grasses are, however, not the only system of crops that are improved by the alternating system of husbandry. The tillage crops, in

turn, are alike benefited, not only from the advantages of change, which I have endeavored to point out, but from the vegetable matters of the sward, which, instead of remaining in a measure dormant and useless, are decomposed, and become the active food of the crop; while the root crops by their pulverizing influence upon the soil, improve it mechanically for both grain and grass.

As a general remark, it may be said, that labor and capital can be expended in no way more profitably by the farmer, than by enriching his lands. God has given to us all the elements of fertility, of plenty, and happiness. He has given to man the capacity of appropriating them to his own use. He has commanded him to exercise these capacities with diligence—and although He has not promised, He seldom ever fails to bestow upon those who honestly keep the command, the highest rewards in temporal happiness.

The great secret of success in agriculture, consists in adapting our crops to our soils, in fitting the soil for their reception, in feeding them well, and in giving them proper culture; and the great obstacles to improvement are, ignorance of the principles or science of agriculture, a blind adherence to old practices, and a parsimony of expenditure. We better understand the economical management of animals than we do of plants. We know that we cannot make fat beef, or pork, or mutton, profitably, without we feed high. It requires a certain amount of food to keep an animal in good condition—all beyond this which the beast can consume, digest, and assimilate, is virtually converted into flesh. Now, it makes a vast difference whether this extra food is converted into flesh in three months, or twelve; because, in the former case, three-fourths of the ordinary food required to sustain life and condition, for a year, is saved to the feeder, besides an equal expense in attendance. It is precisely so with crops. One well fed acre is more profitable than three poor fed acres; because it requires only one-third of the labor, and will oftentimes give an equal or greater profit. Take Indian corn, for example, the average product of which I will assume to be thirty bushels an acre. Now if we make an acre of suitable rich soil, with twenty-five loads of unfermented manure, and tend the crop well, we may get ninety bushels of corn from the acre—and the amount has oftener been swelled to one hundred, and one hundred and twenty. Here, then, is a nett gain of sixty bushels by feeding an acre well, over the nett gain of an acre not fed well. In regard to the cost of the manure, call it if you please twenty-five dollars, and consider it capital expended. If you deduct this from the profits of the well fed acre, there would still remain a difference in favor of the latter, according to the common scale of prices, of twenty-five dollars. If you merely charge the interest on the outlay, this would be one dollar and fifty cents, and would diminish the difference between the good and bad acre but this amount, or would leave the crop on the rich acre worth fifty-eight dollars more than that on the poor acre. Estimate the farmer's corn crop at ten acres, and you will perceive that the cultivator of the ten rich acres, realizes a nett five hundred and eighty dollars more than the cultivator of the ten poor acres. Carry out this comparison to the products of the whole farm, and we shall at once discover why the good farmer finds a profit in an outlay every four years of twenty dollars an acre in enriching his lands. But if we suppose—what is, in fact, the truth, that the long manure which causes this great increase in the corn crop, is as good for the next crop as it would have been, had it been summer-yarded, as was once, and is now often the case, the absolute additional expense is nothing—the food of the corn crop is absolutely saved to the farm. I might carry these illustrations to other crops, to farms and to districts of country. In my journeying in the states of New York and New Jersey, I have seen many farms, and some districts, where the intrinsic value of lands has been enhanced a thousand per cent, or in a tenfold degree, by the almost magic influence of improved husbandry, based upon the principle of working no more land than can be kept rich and worked well.

These facts would suggest to the farmer who would keep the fertility and productiveness of his soil, the necessity of,

1st, Consuming his crops, as far as practicable, upon his farm, or returning to it an equivalent in manure for what he carries off.

2d, Of carefully husbanding every animal and vegetable substance which he can command, of preserving it from waste, and of faithfully and judiciously applying manure to the soil as food for his crops; and

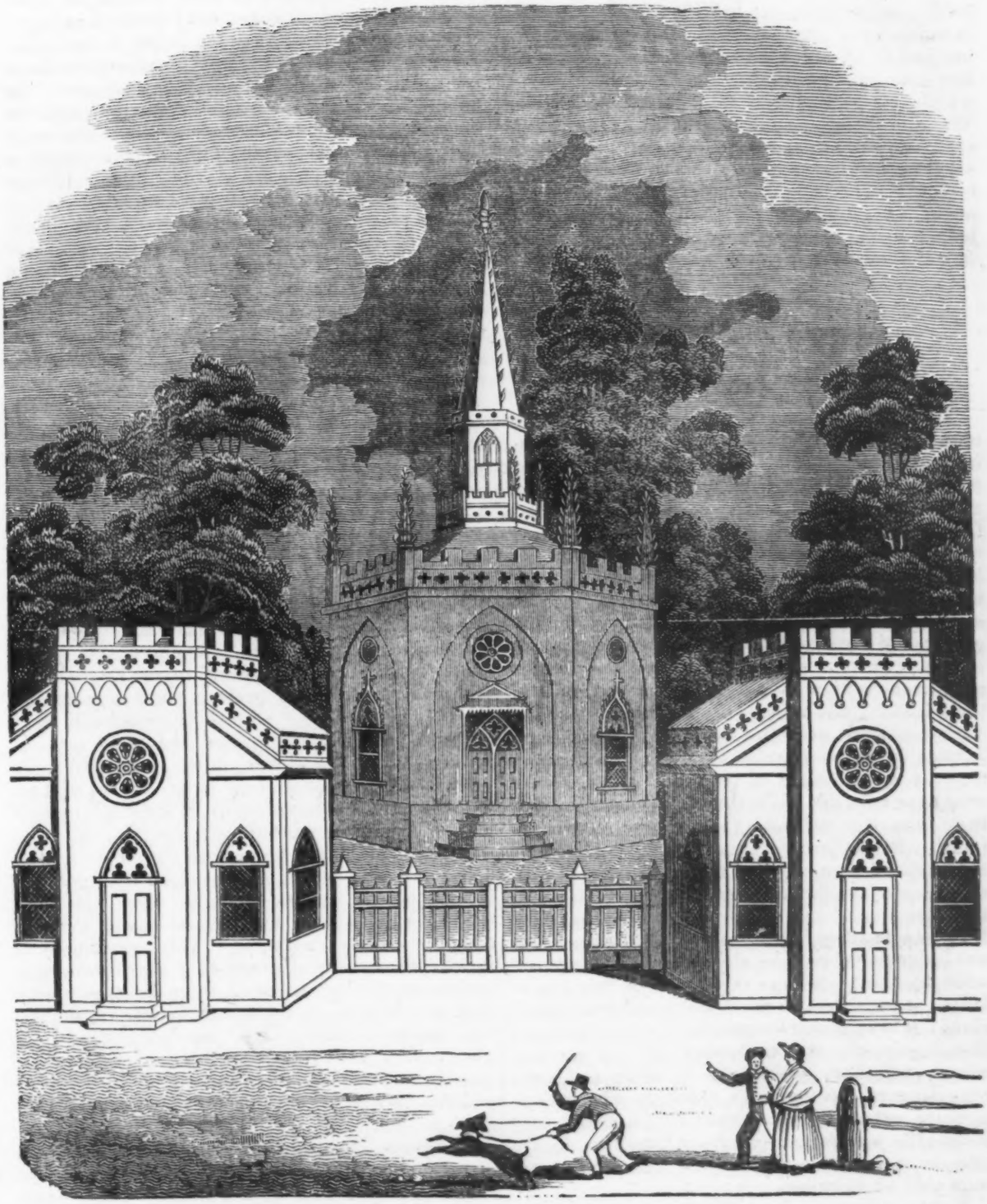
3d, Of studying those laws of nature which govern, to a greater or less extent, the whole business of the farm, and which can never be violated with impunity.

HINTS TO FARMERS.

It is much to be wished that our farmers were more desirous to possess good, fertile, productive farms than large farms. If farmers in our country, instead of increasing the number of their acres, would bestow more care and expense in cultivating, in the best possible manner, every acre they already possess, they would live easier, and become richer and happier also. It has often been remarked, especially by those who have travelled abroad, that the great fault of our American farmers lies in their eager desire to add field to field, which often impoverishes them, keeps them in debt, and renders them unable to bring any of their land into the highest and most profitable state of cultivation.

The advice of Dean Swift should be treasured up by every good farmer. This distinguished man said, "Whoever can make two ears of corn or two blades of grass grow upon a spot of ground where only one grew before, deserves better of mankind, and does more essential service to his country, than the whole race of politicians put together."

Sloth like rust, consumes faster than labor wears; while the used key is always bright.



SCHENECTADY LYCEUM.

SCHENECTADY, in the state of New York, is the seat of Union College, one of the most flourishing among the higher institutions of learning, in the United States. But, until the erection of the edifice here represented, the town was destitute of any proper accommodation for a school or academy. This deficiency has been fully supplied by the structure before us, which, as to its exterior, is a striking and beautiful piece of architecture, and in its interior, presents a novelty of arrangement, apparently well adapted to the purposes which its founder had in view. The form of the school-room is octagonal. The teacher's desk is so situated that he can overlook the whole school-room; while the scholars sit with their backs to him, and are separated from each other by partitions between the seats. Thus all the scholars have the consciousness of being continually under the eye of the superintendent, and, as he is himself unseen, they cannot, as in other schools, take advantage of any momentary withdrawal of his attention. The second story contains the hall of the Lyceum Society, and is otherwise devoted to literary and scientific purposes.

The edifice is in the form of an octagon, with belfry and steeple, and is built of brick, stuccoed in imitation of granite. The architecture is modern gothic, of which many specimens now exist in our country, in churches and other buildings, to which the peculiarities of its style are adapted. There is something more pleasant to the beholder, in its somewhat fantastic variety, than in the severe and simple beauty of the Grecian architecture. The two buildings in front of the Lyceum, on each side of the gateway, likewise belong to the establishment, and are constructed in a similar style with the principal edifice.

JUGGLERS.

Those occupations which were of the most absolute necessity to the support of existence, were doubtless the earliest, and, in the infancy of society, the sole employments that engaged attention. But when the art and industry of a few were found sufficient for the maintenance of many, property began to accumulate in the hands of individuals, and as all could no longer be engaged in the production of the necessaries of life, those who were excluded, applied their ingenuity to those arts which, by contributing to the convenience or amusement of the former, might enable them to participate in the fruits of their labour; and several of these have acquired a pre-eminence over the more useful avocations. A taste for the wonderful seems to be natural to man in every stage of society, and at almost every period of life. We, therefore, cannot wonder that, from the earliest ages, persons have been found, who, either more ingenious than others, have availed themselves of this propensity, to obtain an easy livelihood by levying contributions on the curiosity of the public. Whether this taste is to be considered as a proof of the weakness of our judgement, or of innate inquisitiveness which stimulates us to enlarge the sphere of our knowledge, must be left to the decision of metaphysicians: it is sufficient for present purposes to know that it gave rise to a numerous class of persons, whom, whether performers of sleight-of-hand, rope-dancers, mountebanks, teachers of animals to perform extraordinary tricks; or, in short, who delude the senses, and practise a harmless deception on spectators—we include under the common title of Jugglers.

If these arts served no other purpose than that of mere amusement, they yet merit a certain degree of encouragement, as affording at once, a cheap and innocent diversion; but jugglers frequently exhibit instructive experiments in natural philosophy, chymistry and mechanics: thus, the solar microscope was invented from an instrument to reflect shadows, with which a Savoyard amused the German populace; and the celebrated Sir Richard Arkwright is said to have conceived the idea of the spinning-machines, which have so largely contributed to the prosperity of the cotton manufacture in England, from a toy which he purchased for his child of an itinerant showman. These deceptions have, besides, acted as an agreeable and most powerful antidote to superstition, and to that popular belief in miracles, conjuration, sorcery, and witchcraft, which preyed upon the minds of our ancestors; and the effects of shadows, electricity, mirrors and the magnet, once formidable instruments in the hands of interested persons for keeping the vulgar in awe, have been stripped of their terrors and are no longer frightful in their most terrific forms.

That this superstitious dread led to the persecution of many innocent beings, who were supposed to be guilty of witchcraft, is too well known to require illustration; at no very distant period courts of law have been disgraced by criminal trials of that nature; and judges, who are still cited as models of legal knowledge and discernment, not only permitted such cases to go to a jury, but allowed sentences to be recorded which consigned reputed wizards to capital punishment. In Poland, even so late as the year 1730, a juggler was exposed to the torture, until a confession was extracted from him that he was a sorceror, upon which, without farther proof, he was immediately hanged; and instances in other countries might be multiplied, almost without end. But this, although it exceeds in atrocity, does not equal in absurdity, the infatuation of the tribunal of the Inquisition in Portugal, which actually condemned to the flames, as being possessed by the devil, a horse belonging to an Englishman who had taught it to perform some uncommon tricks; and the poor animal is confidently said to have been publicly burned at Lisbon, in conformity with his sentence, in the year 1601.

The only part of Europe in which the arts of sorcery now obtain any credit is Lapland; where indeed, supposed wizards still practise incantations, by which they pretend to obtain the knowledge of future events, and in which the credulity of the people induces them to place the most implicit confidence. On such occasions a magic drum is usually employed. This instrument is formed of a piece of wood of a semi-oval form, hollow on the flat side, and there covered with a skin, in which various uncouth figures are depicted; among which, since the introduction of Christianity into that country, an attempt is usually made to represent the acts of our Saviour and the Apostles. On this covering several brass rings of different sizes are laid, while the attendants dispose themselves in many antic postures, in order to facilitate the charm; the drum is then beaten with the horn of a raindeer, which occasioning the skin to vibrate, puts the rings in motion round the figures, and, according to the positions which they occupy, the officiating seer pronounces his prediction.

It is unfortunate that of all the books (and there were several) which treated of the arts of conjuration, as they were practised among the ancients, not one is now extant, and all that we know upon that subject has been collected from isolated facts which have been incidentally mentioned in other writing. From these it would however, appear, that many of the deceptions which still continue to excite astonishment were then common.

A century and a half before our era, during a revolt of the slaves in Sicily, a Syrian of their number, named Eunus, a man of considerable talent, who, after having witnessed many vicissitudes, was reduced to that state, became the leader of his companions by pretending to an inspiration from the gods; and in order to confirm the divinity of his mission by miracles, he used to breathe flames from his mouth when addressing his followers. By this art the Rabbi Barchochebas also made the credulous Jews believe that he was the Messiah, during the sedition which he excited among them in the reign of Hadrian; and, two centuries afterward, the Emperor Constantius was impressed with great dread, when informed that one of the body-guard had been seen to breathe out fire. Historians tell us that these deceptions were performed by putting inflammable substances in a nut-shell pierced at both ends; which was then secretly conveyed into the mouth and breathed through. Our own fire-eaters content themselves with rolling a little flax, so as to form a small ball, which is suffered to burn until nearly consumed; more flax is then tightly rolled round it, and the fire will thus remain within for a long time, and sparks may be blown from it without injury, provided the air be inspired, not by the mouth, but through the nostrils. The ancients also performed some curious experiments with that inflammable mineral oil called naptha, which kindles on merely exposing it near a fire. Allusion is supposed to have been made to this in the story of the dress of Hercules, when it is said to have been dipped in the blood of Nessus. Many authors assert that it was with this substance Medea destroyed Creusa, by sending to her a dress impregnated with it, which burst into flames when she drew near the fire of the altar; and there can be no doubt that it was used by the priests, on those occasions when the sacrificial offerings took fire imperceptibly.

The trial by ordeal, in the middle ages, in which persons accused of certain crimes were forced to prove their innocence by walking blindfold among burning ploughshares, or by holding heated iron in their hands, was probably little else than a juggling trick, which the priests conducted as best suited their views. The accused was committed to their care during three entire days previous to the trial, and remained in their custody for the same space after it was over; the ordeal took place in the church under their own immediate inspection; they not only consecrated, but heated the iron themselves; mass was then said, and various ceremonies were performed, all calculated to divert the attention of the spectators; and, when the operation was over, the part which had been exposed to the fire, was carefully bound up and sealed, not to be opened until the end of the third day; doubtless, therefore, the time before the trial, was occupied in preparing the skin to resist the effects of heat; and that afterward, in obliterating the marks of any injury that it might have sustained. That such was the fact, has indeed been acknowledged in the works of Albertus Magnus, a Dominican friar, who, after the trial by ordeal had been abolished, published the secret of the art, which if his account be correct, consisted in nothing more than covering the hands and feet at repeated intervals with a paste made of the sap of certain herbs, mixed together with the white of an egg.

This deception was, however, practised in times far more remote than the period to which we have alluded. There was anciently an annual festival held on Mount Soracte, in Etruria, at which certain people called *Hirpi* used to walk over live embers, for which performance they were allowed some peculiar privileges by the Roman senate; the same feat was achieved by women at the temple of Diana, at Castabala, in Cappadocia; and allusion is even made, in the Antigone of the Grecian poet Sophocles, who wrote nearly five centuries anterior to our era, to the very species of ordeal which has been just noticed.

In modern times, much notice has frequently been excited by jugglers, who practise deceptions with fire. Toward the end of the seventeenth century, one Richardson, an Englishman, excited great astonishment at Paris by pretending to chew burning coals, and to swallow melted lead, with many other equally extraordinary feats; some of which are thus recorded in Evelyn's diary:—"October the 8th, 1672; took leave of my Lady Sunderland, who was going to the Hague to my Lord, now embassador there. She made me stay to dinner at Leicester House and afterward sent for Richardson, the famous fire-eater. He, before us, devoured brimstone, on glowing coals, chewing and swallowing them. He melted a beere glasse and eate it quite up; then taking a live coal on his tongue, he put on it a raw oyster; the coal was blowne on with bellows till it flamed and sparkeled in his mouth, and soe remained until the oyster was quite boiled; then he melted pitch and wax with sulphur, which, he dranke down as it flamed."—Many of our readers must recollect Signora Girardelli; and Miss Rogers, the American fire-eater, who was announced as having entered a heated oven with a leg of mutton in her hand, and having remained there until it was baked! This young lady exhibited all the tricks usually performed by such persons; she washed her hands in boiling oil, and then suffered aquafortis to be poured over them; but below the oil, there no doubt, was a quantity of water, the air from which, when heated, forcing itself through the supernatant oil, gave it the appearance of boiling, when in reality its temperature probably did not exceed a hundred degrees of Fahrenheit; and when the hands were once well coated with oil, there was no danger from the aquafortis. She had also a ladle of melted lead, out of which she appeared to take a little with a spoon and pour into her mouth, and then to return it in the shape of a solid lump; but in pretending to take the lead into the spoon, it was, in fact, quicksilver that was received, through a dexterous contrivance in the ladle, and this she swallowed; the solid lead having been previously placed in her mouth. She, besides, repeatedly placed her foot on a bar of hot iron; but the rapidity with which she removed it, scarcely allowed time to injure the most delicate skin, even had it not been previously prepared: the cuticle of the hands and of the

soles of the feet, may however, be easily rendered sufficiently callous to support a longer experiment. This effect will be produced if it be frequently punctured, or injured by being in continual contact with hard substances; repeatedly moistening it with spirit of vitriol will also at length render it horny and insensible; and thus it is not uncommon to see the laborers at copper-works take the melted ore into their hands. Our readers undoubtedly remember the attention excited in this country a few years ago, by Monsieur Chabert, whose tricks with fire procured him the appellation of "Fire King." Of course his performances were based upon his knowledge of the chymical properties of certain substances which he well knew how to apply.

The exhibition of cups and balls is of great antiquity, and depends entirely on manual dexterity. It is mentioned in the works of various ancient authors, one of whom relates the astonishment of a countryman who, on first witnessing the performance exclaimed, "that it was well he had no such animal on his farm, for under such hands, no doubt all his property would soon disappear."

Feats of strength have been common to all countries in every age. More than fifteen hundred years ago there were persons who excited astonishment, by the since ordinary exhibition of supporting vast weights upon the breast, and of even suffering iron to be forged on an anvil placed upon it. But these are mere tricks: to support the former, it is only necessary to place the body in such a position with the shoulders and feet resting against some support, as that it shall form an arch; and as for the latter, if the anvil be large and the hammer small, the stroke will scarcely be felt; for action and re-action being equal and reciprocal, an anvil of two hundred pounds weight will resist the stroke of a hammer of two pounds, wielded with the force of one hundred pounds, or of four pounds with the impetus of fifty, without injury to the body.

In the beginning of the seventeenth century, there was a German, who travelled over Europe under the appropriate name of Samson, and who rendered himself celebrated by the uncommon strength which he displayed: among many other extraordinary feats, it is said, that he could so fix himself between two posts, as that two, or even more horses, could not draw him from his position. The same exploit was attempted not many years back, in England by a person who placed himself with his feet resting in a horizontal posture against a strong bar, only one horse was employed, and the man was enabled to resist the entire force of the animal, until both his thigh-bones suddenly snapped asunder. Another had the temerity to try the same experiment, and, in like manner, broke both his legs. These instances clearly show, that apparent strength is often nothing more than a judicious application of the mechanical powers to the human frame; and from the catastrophe attending the two latter, may be deduced the anatomical fact, that the sinews of the arms possess a greater power of resistance than the largest bones of the body.

Feats of tumbling, rope-dancing, and horsemanship, were practised at a very early period. Xenophon mentions a female dancer at Athens, who wrote and read while standing on a wheel which revolved with the greatest velocity; but the manner in which this was performed is not explained. Juvenal seems also to have alluded to some similar performance, at Rome, in that passage where he says:—

——————"The man who springs
Light, through the hoop, and on the tight-rope swings."

Addison tells us that, in his travels through Italy, he witnessed an annual exhibition that is peculiar to the Venetians. "A set of artisans by the help of poles, which they laid across each other's shoulders, built themselves up into a kind of pyramid; so that you saw a pile of men in the air, of four or five rows, rising one above another. The weight was so equally distributed, that every man was well able to bear his part of it; the stories, if they might be so called, growing less and less as they advanced higher and higher. A little boy represented the top of the pyramid, who, after a short space, leaped off, with a great deal of dexterity, into the arms of one who caught him at the bottom." But this was only the revival of an ancient feat, which, as we learn from the following verse of the poet Claudian, was formerly practised among the Romans:

"Men pil'd on men, with active leaps arise,
And build the breathing fabric to the skies;
A sprightly youth above the topmost row
Points the tall pyramid, and crowns the show."

In the thirteenth century, these performances were introduced at Constantinople by a strolling company from Egypt, who afterward travelled to Rome, and thence through a great part of Europe. They could stand in various postures on horses while at full speed, and both mount and dismount without stopping them; and their rope-dancers sometimes extended the rope on which they poised themselves between the masts of ships.

It appears also that the ancients taught animals to perform many of the tricks that are still exhibited, and some even yet more extraordinary. In the year 543, a learned dog was shown at the Byzantine court, which not only selected and returned to the several owners, the rings and ornaments of the spectators, which were thrown together before him, but, on being asked his opinion respecting the character of some of the females who were present, he expressed it by signs at once so significant and correct, that the people were persuaded he possessed the spirit of divination. In the reign of Galba, an elephant was exhibited at Rome which walked upon a rope stretched across the theatre; and, such was the confidence reposed in his dexterity, that a person was mounted on him while he performed the feat.

It must require the exercise not alone of vast patience, but also of extraordinary cruelty, mingled perhaps with great kindness, to train animals to exhibit a degree of intelligence approaching to that of human beings. It is said that bears are taught to dance by being placed in a den with a floor of heated iron: the animal endeavoring to

avoid the smart to which his paws are thus exposed, rears himself on his hind legs, and alternately raises them with the utmost rapidity, during all which time a flageolet is played to him; and, after this lesson has been frequently repeated, he becomes so impressed with the associated recollection of the music and the pain, that, whenever he hears the same tune he instinctively recurs to the same efforts in order to escape the fancied danger.

In the middle of the last century, there was an Englishman, named Wildman, who excited great attention by the possession of a secret through the means of which he enticed bees to follow him, and to settle on his person without stinging him. A similar circumstance is related in Francis Brue's voyage to Africa, in 1698; in which mention is made of a man who was constantly surrounded by a swarm of these insects, and who had thence obtained the title of "king of the bees."

Only one instance is recorded in ancient history, of the art of supplying the deficiency of hands by the use of the toes; and that is of an Indian slave belonging to the Emperor Augustus, who, being without arms, could, notwithstanding, wield a bow and arrow, and put a trumpet to his mouth with his feet.

Of late years, some persons have exhibited themselves in the character of stone-eaters; but, although these are to be considered as mere jugglers, yet it would appear that there have been others who actually possessed the faculty of digesting similar substances. Of the instances on record we shall merely select one, from the "*Dictionnaire Physique*" of Father Paulian:—"The beginning of May, 1760, there was brought to Avignon a true lithophagus, or stone-eater; who had been found, about three years before that time, in a northern island, by the crew of a Dutch ship. He not only swallowed flints of an inch and a half long, a full inch broad, and half an inch thick; but such stones as he could reduce to powder, such as marble, pebbles, &c. he made up into a paste, which was to him a most agreeable and wholesome food. I examined this man with all the attention I possibly could; I found his gullet very large, his teeth exceedingly strong, his saliva very corrosive, and his stomach lower than ordinary, which I imputed to the vast quantity of flints he had swallowed, being about five-and-twenty one day with another. His keeper made him eat raw flesh with the stones, but could never induce him to swallow bread; he would, however, drink water, wine, and brandy: which last liquor appeared to afford him infinite pleasure. He usually slept at least twelve hours in a day, sitting on the ground, with one knee over the other, and his chin resting on it; and when not asleep, he passed the greater part of his time in smoking."

In the year 1802, there was a Frenchman, who indeed, did not profess to eat stones, but who publicly devoured, at the amphitheatre, in the city of Lisbon, a side of raw mutton, with a rabbit and a fowl, *both alive:* he advertised a repetition of the experiment, with the addition of a live cat; but the magistrates, deeming the exhibition too brutal for the public eye, would not again allow of its performance. Notwithstanding that the public display of this man, and the extraordinary fact of his having appeared to swallow living animals, may rank him in the class of jugglers-it is still probable that he was no impostor; for instances of such uncommon powers of the stomach are by no means rare, and among others, we read of another Frenchman, who was in the constant habit as an amateur, of eating cats alive, and was even strongly suspected of having devoured a child.

BITUMEN.

A SHORT account of this substance, which, under various names is used in America, but more particularly on the European Continent, will be both interesting and instructive to a numerous class of readers, and we have therefore extracted from a new work descriptions of the different species, and their application for useful purposes. The word *bitumen* has been adopted by chymists in the generic term for all bituminous substances, including the species *asphalt*, which is a purely Greek word, answering to the Latin word *bitumen*. *Naptha*, one of the species, is of essential use in preparing Indian rubber, for rendering articles of clothing water-proof. It is found in Persia, Calabria, America, and at Pilchford in England; but the most copious springs are at Baku, near Derband on the northwest shore of the Caspian sea. The soil is of a very clayey marl, strongly effervescing with acids, and so thoroughly impregnated with naptha, that when turned up to the depth of a few inches, it will take fire on the application of a lighted candle, and continue burning till it is purposely extinguished; the flame in calm weather rises to the height of several feet. The naptha is procured by sinking pits into which it percolates. The Persians and Russians use naptha internally as a cordial. It enters into the composition of some varnishes. The naptha procured by distilling the sand-stone, of which there are extensive strata at Pilchford, is sold under the name of "Betton's British Oil," and is esteemed an active remedy for strains and rheumatism. It is used as a substitute for lamp oil. Naptha is remarkable for its property of dissolving caoutchouc, which first swells up, and then gradually gelatinizes, when digested in it with a gentle heat; in this pulpy state it is used to render various articles of clothing water-proof. The goods are stretched out and varnished over with it, and then the varnished sides are applied to each other, and made to adhere by powerful pressure, so as to form a complete fabric or texture. The well-known application of the solution of caoutchouc, in naptha or coal oil, was first suggested by Mr. M'Intosh, of Glasgow.

Mineral tar or bitumen is another species, and is known by the designation of *slime* in Scripture. It is supposed by many to have vitrified on ancient buildings through exposure to the air, and the vitrified appearance of the ruins of Babylon may be more properly attributed to this, than to lightning, as some travellers have inferred. For the

last few years it has been extensively employed for various purposes, and more particularly for paving footpaths and carriage-roads. It is found in abundance in the mines of Bastenne and Guajac, near the Pyrenees. The precise date of the discovery of these mines is not known; but for upward of thirty years, the tar has been used at Bordeaux and its vicinity, in combination with sand and calcareous matter, for roofing houses, and making roads, footpaths, and floorings. It was at first employed, with sand only, in the repair of roads near Bayonne, and being found to answer this purpose, it came afterward to be employed by architects and builders, in its combined form, in preference either to the slate or stone; and at the present time upwards of five-hundred houses in Bordeaux are roofed with it. It was tried with perfect success on the public wharfs and quays at Bayonne, where it still remains in its pristine state. Many bridges, roads, and footways, were also paved with it, in all of which it has been much admired and approved. The qualities of the mineral tar soon became more generally known, and the proprietors of the asphalt mines of Seyssel were among the earliest purchasers of it, for the purpose of admixture with the asphalt rock, and it has since been invariably employed in all the works undertaken by them.

It is now several years since bitumen was first used in Paris; and its merits are now so fully acknowledged in France, that its use has been encouraged by the Government, not only in the metropolis, but also in the provincial towns. It has been extensively applied to the fortifications of Vincennes, Doual, Grenoble, Besançon, Lyons, Lisle, Belfourd, &c.; and to the covering of the roofs of the extensive commissariat magazines at Bercy, and of warehouses constructed several years since in the arsenal at Doual; in the fortification of Bayonne; in the Government bonding warehouses at Bordeaux; in the reservoirs constructed to contain the waters of the Seine at Batignolles, near Paris; for the pavement on the Point-Neuf, in the abattoirs, the common sewers, and in some of the promenades and footpaths of Paris. There is scarcely a town of importance in France or on the Continent where the bitumen of Seyssel and Bastenne is not extensively laid down, and from all accounts with complete success. In London the experiment has been recently made. In 1838 specimens of the former were laid down in Whitehall, opposite the Horse Guards, at the Surry end of Westminster Bridge, and at the foot of the steps at the York Pillar; and of the latter on the carriage pavement in Oxford-street; side pavement at Northumberland House; before the guardroom at the Artillery Barracks, Woolwich; at the terminus of the Croydon Railway; and several other places.* On a small scale—for instance, from fifty to one hundred feet—the expense is considerable; but for a surface of not less than two thousand feet, we believe the cost is about fifteen cents per foot. If it should prove as durable as stone, it must be an excellent substitute in many places.

* Asphaltum has been used with decided success, though to a limited extent, for pavement in the city of New York; not for carriage way, but the foot *pave*.

THE FALLS OF THE MONGAUP.*

BY ALFRED B. STREET.

Struggling along the mountain path,
We hear, amid the gloom,
Like a roused giant's voice of wrath,
A deep toned, sullen boom:
Emerging on the platform high,
Burst sudden to the startled eye
Rocks, woods and waters, wild and rude—
A scene of savage solitude.

Swift as an arrow from the bow,
Headlong the torrent leaps,
Then tumbling round, in dazzling snow
And dizzy whirls it sweeps;
Then, shooting through the narrow aisle
Of this sublime cathedral pile,
Amidst its vastness, dark and grim,
It peals its everlasting hymn.

Pyramid on pyramid of rock
Tower upward wild and riven,
As piled by Titian hands to mock
The distant smiling heaven.
And where its blue streak is displayed,
Branches their emerald net-work braid
So high, the eagle in its flight
Seems but a dot upon the sight.

Here columned hemlocks point in air
Their cone-like fringes green;
Their trunks hang knotted, black and bare,
Like spectres o'er the scene;
Here lofty crag and deep abyss,
And awe-inspiring precipice;
There grottoes bright in wave-worn gloss,
And carpeted with velvet moss.

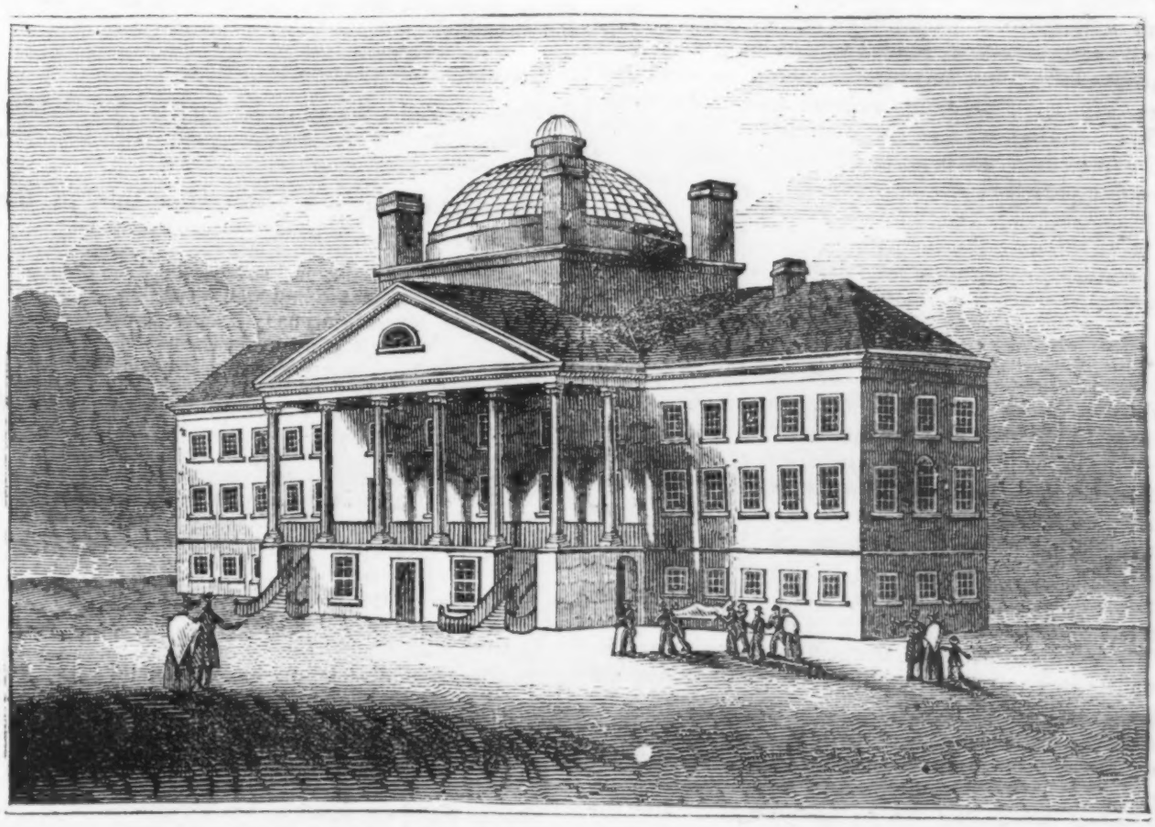
No wandering ray e'er kissed with light
This rock-walled sable pool,
Spangled with foam-gems thick and white,
And slumbering deep and cool;
But where yon cataract roars down,
Set by the sun a rainbow crown
In dancing o'er the dashing strife—
Hope glittering on the storms of life.

Beyond, the smooth and mirrored sheet
So gently steals along,
The very ripples, murmuring sweet
Scarce drown the wild bee's song;
The violet from the grassy side
Dips its blue chalice in the tide;
And, gliding o'er the leafy brink,
The deer, unfrightened, stoops to drink.

Myriads of man's time-measured race
Have vanished from the earth,
Nor left a memory of their race,
Since first this scene had birth;
These waters, thundering now along,
Join in Creation's matin-song,
And only by their dial-trees
Have known the lapse of centuries!

Mirror.

* The Falls of the Mongaup are in Sullivan County, N. Y.—They are situated in the heart of the forest.



MASSACHUSETTS GENERAL HOSPITAL, BOSTON.

THIS has been pronounced the finest building in the State. It stands on a small eminence open to the south, east and west. It is one hundred and sixty-eight feet in length, and fifty-four in its greatest breadth, having a portico of eight Ionic columns in front. It is built of Chelmsford granite, the columns and their capitals being of the same material. In the centre of the two principal stories are the rooms of the officers of the institution. Above these is the operating theatre which is lighted from the dome. The wings of the building are divided into wards and sick-rooms. The staircase and floorings of the entries are of stone. The whole house is supplied with heat by air-flues from furnaces, and with water by pipes and a forcing-pump. The beautiful hills which surround Boston are seen from every part of the building, and the grounds on the southwest are washed by the waters of the bay. The premises have been improved by the planting of ornamental trees and shrubs, and the extension of the gravel walks for those patients whose health will admit of exercise in the open air.

Toward the close of the last century, a gentleman died in Boston, leaving a bequest in his will of five thousand dollars toward the building of a hospital. This circumstance was attended with the beneficial effect of awakening the attention of the public to the subject. Nothing, however, was effected before August, 1810, when two physicians living in Boston, addressed a circular, in which the advantages of a hospital were stated to several gentlemen of Boston, possessed of ample fortunes, and disposed to contribute to institutions in which the public good was concerned. In the beginning of 1811, fifty-six gentlemen, living in different parts of the commonwealth, were incorporated by the name of the Massachusetts General Hospital. Their charter allowed the corporation to hold property to the amount of thirty-thousand dollars yearly income. It also granted to the Hospital a fee simple in the estate of the old Province-House, on the condition that one hundred thousand dollars should be raised by subscription within ten years. Little exertion was made before the autumn of 1816, when a subscription was commenced that was attended with uncommon success. In the towns of Boston, Salem, Plymouth, Charlestown, Hingham, and Chelsea, (including a few subscriptions in some other towns,) 1047 individuals subscribed either to the Hospital or the Asylum for the Insane. More than two hundred of these contributed one hundred dollars or more, and several from one thousand to five thousand, and one, twenty thousand dollars. Donations of equal and larger amounts have since been made, which have increased the funds of this institution, for immediate use and permanent stock, to a greater sum than any other of our institutions has realized, excepting the University at Cambridge.

In 1816 the Trustees purchased the estate at Charlestown belonging to the late Mr. Barrel, formerly called Poplar Grove, and have there built two brick houses, besides the requisite outhouses, for an Insane Hospital. In 1817, they purchased four acres in a field at the west end of Boston, called Prince's Pasture, and on the fourth day of July, 1818, the corner stone of the present Hospital was there laid, in the presence

of many persons of great dignity in public life, and a numerous assemblage of citizens. The civil, religious and masonic services were performed with such impressive pomp, as rendered the whole scene truly solemn and interesting. This building was so far completed on the first of September, 1821, as to be in a fit condition to receive patients. Am. Mag.

LANGUAGE.

It has been a question among philosophers, whether other portions of the animal kingdom do not have the gift and power of language, to some extent, as well as man. And there are not a few, who cast their opinions into the scale favorable to the conclusion that such is the case, for it is evident that there is a communication between many kinds of animals, by means of sound well understood by them. If we view closely the different dialects of barbarians, semi-barbarians, and civilized nations, we shall find that the strength, beauty and comprehensibility of language depend in a great measure upon the character and pursuits of these respective people. The savage of our western wilds, whose wants are few, and his pursuits without variety, has a language composed of few words, for he finds no necessity for more. Yet he is perfectly intelligible to all of his tribe or nation. And so with all nations of antiquity. The human language was a perfect barren, compared with its present profusion of words and ideas, except among the Greeks and Romans, where arts, science and a variety of civil pursuits were followed. According to the pursuit, was the character of the language, and that avocation of a public nature, such as commerce, military, agriculture, or the polite arts, which gave the ascendancy to either of the three great human powers, Reason, Imagination and Passion, moulded the language in accordance with such ascendancy.

In Greece, where intellect was the governing power, and the passions were kept in control by its force, the language became refined—and hence the beauty of Greek poetry, which is a transcript of the language in its greatest purity. The language is the reflection of the moral character, and hence, when the mind was under the control of passion, language assumed a form little superior to brute communication. In eastern countries, where the aggrandizement of the prince and empire was the chief aim of the subject, and splendor in all its phases dazzled the people, imagination was given full power over the language; and hence the poetical character of the ideas of the orientals, and their corresponding fantastical mode of expression.

As mankind advanced, language assumed more symmetry, strength, and beauty. The English, or the Anglo-Saxon language, has greatly improved, and its improvement apparently kept pace with the increasing refinements of the English people.

In the year 700, the Lord's prayer begun thus:—

'Uren Fadar thie art in heofnas, sic gekalgud thin noma, to cymeth thin rick; sic thin wlila suc in heofnas and in eatho.'

Two hundred years after, thus—

'Thee ure Fader the ert on heofnum si thin namagehal-god. Com thin ric. Si thin willa on eorthan swa, on heofnum.'

About two hundred years after this, in the reign of Henry II., it was rendered thus:—

'Ure Fader in heaven, rich
Thy name be hailed eber lich,
Thou bring us ty michell bliss:
Als hit in heavenly doe
That in yearth beene it also,' &c.

About one hundred years after, in the reign of Henry III., it ran thus:—

'Fader thou art in heaven blisse,
Thine Helye name it wurt the bliss
Cumen and not thy kingdom,
Thin holy will it be all don
In heaven and in earth also,
So it shall be in full well Ie tro,' &c.

In the reign of Henry VI. it began thus—

'Our Fader art in heavens, haliewid be thi name; thy kingdom come to thee: be thee will don in earth as in heaven,' &c.

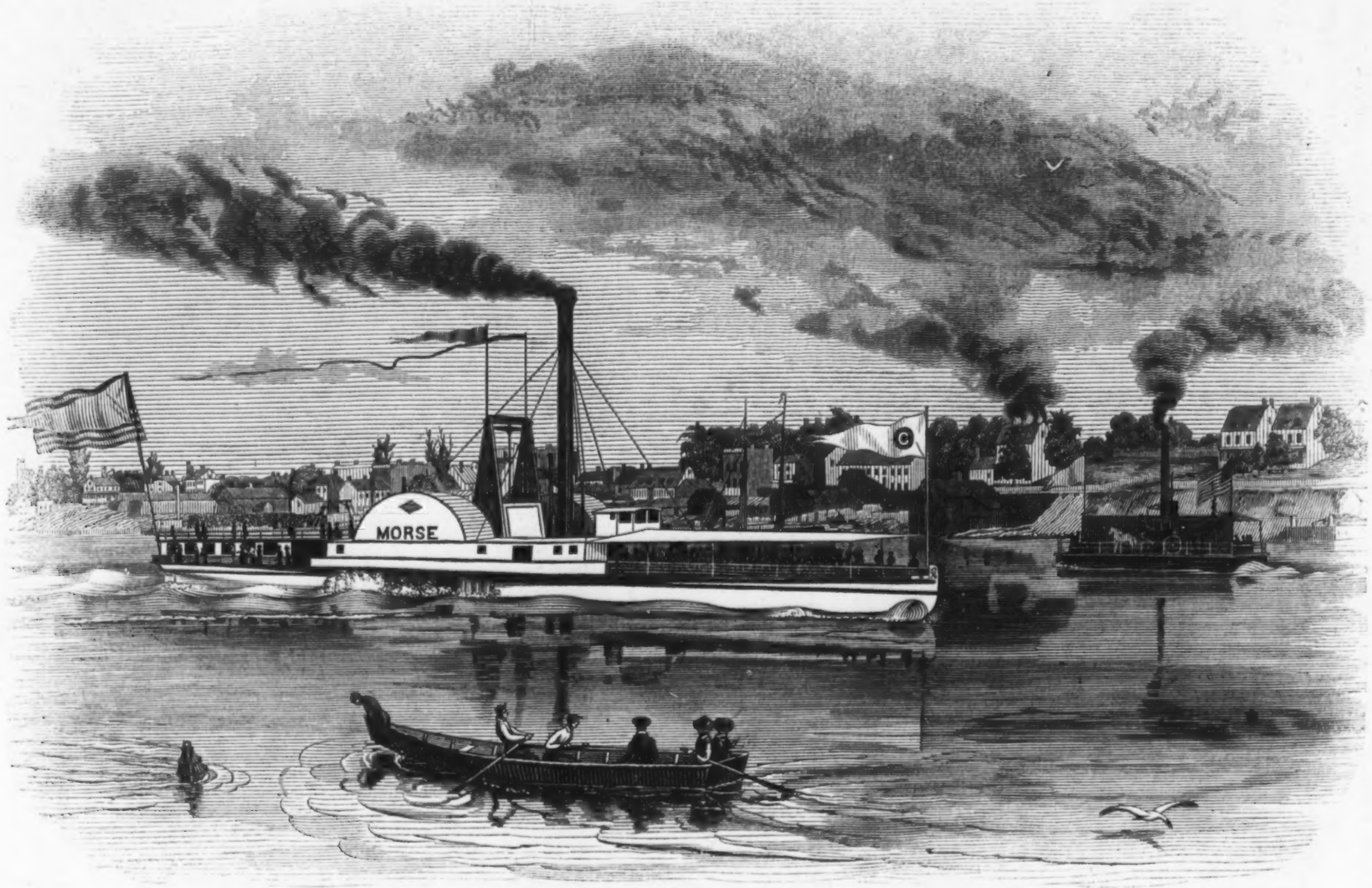
In 1537, it began thus:—

'O, our Father who art in heaven! hallowed be thy name. Let thy kingdom come. Thy will be fulfilled as well in earth as it is in heaven,' &c.

The following is a version of the hymn in St. Luke, (chap. 1, 46,) usually called the Magnificat. Its date is not known:—

'My soule hogis, or lofys, God, and my spirit joyed in God my hele.
For he has by holdyn tho mekenes of hys handemayden.
Lo therefore blyssed me schal say all generations.
For he has done grete things, for he is mighty, and holy the name of hym.
And hys mercy from progeny to progenys, to tho dredande hym.
He made power in hys arme, he sparbylde tho proude in thought of theire herte.
He put down tho mighty of sete, and heghed tho meke.
Tho hungry he fillede with godys, and tho ryche he lefte vyde.
He toke Israel hys chylde, unthought of hys mercy.
As he spake to our fadyrs, Abraham, and sede of hym in worldys.'

Give me the money that has been spent in war, and I will purchase every foot of land upon the globe. I will clothe every man, woman and child in an attire that kings and queens would be proud of; I will build a school-house upon every hill side and in every valley over the whole habitable earth; I will supply that school-house with a competent teacher; I will build an academy in every town and endow it; a college in every state, and fill it with able professors. Stebbins.



VIEW OF WILLIAMSBURGH, L. I.—FROM NEW-YORK.

WILLIAMSBURGH, L. I.

The village of Williamsburgh is situated on the westerly extremity of Long Island, adjoining the northern boundary of the city of Brooklyn, and immediately opposite the most populous section of the city of New York, from which it is separated by the narrow current of the East river. Like Brooklyn, the growth of this thriving village is consequent on, and identified with, the prosperity of the Great Commercial Metropolis, and like its giant neighbor, its onward progress will be greatly increased in strength and volume, with the restored commercial and financial energies of the whole nation. Previous to the year 1835, the capabilities of this location for desirable summer residences for the wealthy inhabitants of the great city, and for buildings to be appropriated to the occupancy of mechanics and artisans, and for the manufacture of their wares, were not duly appreciated, but the stimulus then given to enterprise directed the attention of capitalists to this eligible point, and during that and the succeeding year, the real estate of the village found ready purchasers at constantly appreciated prices. That these investments, when discernment and discrimination were exercised in the selection of property in reference to price and locality were judicious, will be readily admitted on reference to the accompanying sketch.

That portion of the village fronting on the East river, and overlooking the city of New York, bounded on the south by the arc of the semicircle which forms the Wallabout bay, and on the north by the mouth of Bushwick creek, has peculiar eligibilities for summer residences for the man of business, or the retired millionaire.

From the river's brink between Grand-street and the Wallabout, you reach the crown of the village by a gentle ascent of about a quarter of a mile, and along this extended slope the eye ranges over a prospect, which for extent and variety is rarely surpassed.

Before you, the great commercial mart with its busy multitude hurrying to and fro, appears like a giant beehive; adjoining on the shores of the Island of New York, elegant mansions with their ornamented grounds and waving foliage attract your attention; and farther to the right, the lofty shot-tower lifts its white shaft to the clouds, flanked by the massive Penitentiary buildings on Blackwell's island, whose bristling defences appear in the distance, like the fortified battlements of some feudal baronial castle.

Still farther in the same direction the turbid waters of Hell Gate, which

> "Groan and sweat in their great agony,"

appear in the far distance like the indistinct and troubled fancies of a dream, while the white sails of the coasting craft, and the abrupt bluffs and foliage-crested eminences on either shore close the view to the right.

On the left, the heights of Brooklyn, studded with mansions distinguished for their cost and elegance, and wreathed with evergreens of rare beauty and luxuriance, remind the spectator of the costly palaces of Venice, in the noonday of her splendor, while the whole sweep of the noble bay, checkered with the light tracery of the numerous water-craft moored to the wharves, or which lie motionless on its bosom, and decorated with the flowing canvass, streaming pennants, and variegated flags of the moving fleet, entering and departing—lends renewed interest to the glowing panorama.

Still onward, the frowning batteries of Governor's island, Ellis's island, and Gibbet island, hover, like carrion-scenting vultures, above the track of the passing vessels, while Staten Island, with the beautiful villas of New Brighton, crowning its circling terraces, and the quiet village of Castleton, distinguished by the extensive erections attached to the Quarantine station, and the low line of shore fronting the state of New Jersey—offers a combination of varied attractions.

On either hand the posthumous fame of Fulton ascends with the spiral wreaths of smoke, that like dusky serpents curl from the funnels of the numerous steamers that ply to and fro upon the bay and river, while the "*yo, heave ho,*" of the mariners, the monotonous chant of the stevedores, the measured stroke of the skilfully-plied oars of the waterman, the "clinking hammers" of the ship-yards, the hurried shouts of the officers of vessels and the answering response of their crews, the rattling of iron cables, the creaking of swayed masts, and the flutter of shivering sails—are the whisperings of the modern Babel, falling on the ear of the loiterer at Williamsburgh, in her seasons of repose.

The prospect from the southern section of the village embraces a fine view of the Wallabout bay; and among the striking objects which arrest the attention, the extensive ship houses and vessels of war at the Navy yard, and the United States' Naval hospital, are peculiarly conspicuous.

Landward from the tranquil Bay, which is in the form of a crescent, the rising grounds form a natural semi-amphitheatre, whose surface is dotted with tasty cottages and cultivated gardens, and which combined with the gentle undulation which greets the eye, constitute a scene of no little beauty.

In the interior of the village, a short mile from the river, a number of enterprising citizens of the metropolis have erected neat summer dwellings, whose white pillars, cupolas, and wings, when viewed from a distance, are picturesque and attractive.

The several avenues which connect the village with the interior, among which Maspeth avenue, Division avenue, which is the dividing line between Brooklyn and the village, and extends to the Jamaica and Brooklyn turnpikes, and the Jamaica and Newtown turnpikes are the most prominent, and conduct the traveller through numerous scenes of romantic interest.

The new turnpike just completed, which skirts the margin of the East river until it reaches Ravenswood, at a distance of four miles, furnishing a view of the establishment for the support and education of pauper children under the control of the New York Common Council, is a beautiful drive, passing through a checkered landscape of hill and dale, meadow and thicket, and giving occasional glimpses of Long Island sound on the one hand, and New York bay on the other.

But in our utilitarian age and country, the useful takes precedence of the ornamental, and the rapid increase of Williamsburgh must be the result of its local adaptation to the requirements of economy and convenience, rather than to its claims on the taste of the wealthy portion of our population.

Connected with New York by two ferries, one between Peck slip and South Seventh-street, and the other between Grand-street in New York, and the foot of Grand-street, Williamsburgh, with boats constantly plying, the manufacturer and mechanic can conduct his business and reside at Williamsburgh at a reduced expenditure, and at the same time enjoy most of the benefits resulting from a residence in the metropolis. In addition to the ferry accommodations above named, the new ferry from Houston-street in New York, to Grand-street, Williamsburgh, will be in operation in a few months.

The village covers an area of about one thousand acres divided into eleven hundred lots, each twenty-five by one hundred feet. There have been erected since the year 1836, between four and five hundred dwellings and several manufactories. There are six churches erected for the accommodation of the Reformed Dutch, Episcopal, Methodist, and Roman Catholic congregations. There are also within the village and on its immediate boundaries, nine rope-walks, one glue manufactory, four hat manufactories, and one in process of erection, two tanneries, two distilleries, two ship-yards, one carpet manufactory and two establishments for grinding spices, and also several schools and one lyceum, numbering about fifty members, together with one Fire Insurance company, the business of which is extensive and profitable.

The population has increased about two thousand since 1836, and the numerous dwellings under contract and in process of erection indicate a continuation of a like increase. The village is governed by a board of nine trustees, possessing the power of opening streets, apportioning taxes, &c. &c.

The principal streets which intersect each other at right angles, are opened and regulated, and several are paved.

The distance between the most populous portions of Long Island and the city of New York, is much lessened by the new avenues recently opened to the Village, and which has greatly increased the travel across the different ferries, and there is little doubt that the lapse of a few years will give to Williamsburgh a population, whose numbers will entitle it to rank with what Brooklyn was a short period since.

MINERAL KINGDOM.

BASALT.

Basalt is a term employed by geologists to describe a rocky compound, which forms the most beautiful columnar masses to be found in the structure of our globe. In many places these natural architectural edifices are to be found, exceeding in magnitude and grandeur of arrangement the boasted colossü of Egyptian or Indian art. Basaltic formations have a singular tendency to assume a columnar shape, and while this fact is allowed to be a characteristic of this mineral, no constituent solid material of the globe has been more frequently the subject of dispute among recent geologists—an almost equal number strongly contending for its igneous and its aqueous origin.

Basaltic columns of greater or lesser magnitude are found in nearly every part of the world, but the most remarkable groups are to be seen among the British islands. As it is not our design to notice in detail these formations, but simply to

make a geological inquiry concerning this species of mineral, we will take but a brief view of two or three of the most remarkable of these groups, as illustrative of the whole.

The Giant's Causeway in Ireland, consists of three piers projecting from the base of a stratified cliff about four hundred feet in height; the principal pier is visible for about three hundred yards in extent, at low water, the others not more than half that distance. It is composed of polygonal or many-sided pillars, of dark-colored basalt (see the above engraving), so closed united that it is difficult to insert more than a knife-blade between them; and the formation of a continuous surface at each point in the pavement, by polygons, whose angles vary considerably. Toward the centre of the whole mass the pillars ascend; and, from the peculiar appearance of the surface, this vertex is usually called the Honeycomb. The number of the sides of these pillars varies from three to nine.

Each pillar is a distinct piece of workmanship, separate from the other columns, and then of itself separable into distinct joints, whose articulation is as perfect as human ingenuity could have made it, the terminations being concave and convex. Stability to this piece of architecture is given by the angles of the lower joints overlapping the upper ones so closely, that to dislocate them a fracture is frequently produced.

In the vicinity of the Causeway, the whole coast of Antrim presents a succession of basaltic capes and sudden elevations, which give to the mind of the imaginative visiter the appearance of hundreds of splendid palaces, half submerged by the waters of the ocean. The most remarkable of these promontories is the one represented in the subjoined engraving. The detached mass in the centre is called Carrick-a-Rede.

Carrick-a-Rede.

This island is nearly the same height as the adjacent mainland and formed entirely of basaltic columns. This mass is separated from the mainland by a chasm of sixty feet in breadth. Large iron rings are fastened into the rocks on each side to which two ropes are fastened having cross rope at intervals sufficiently frequent to support a row of planks. This forms a bridge over which people safely pass.

Wm. Howitt gives the following graphic description of a visit to Fingal's cave in the island of Staffa:—

"We advanced along a sort of Giant's Causeway, the pavement of which were the heads of basaltic columns, all fitting together in the most beautiful symmetry, and, turning round the precipice to our right hand, found ourselves at the entrance of the great cave. The sea was too stormy to allow us to enter it, as is often done in boats; we had, therefore, to clamber along one of its sides, where a row of columns is broken off at some distance above the waves, and presents an accessible, but certainly very formidable causeway, by which you may reach the far end. I do not believe that any stranger, if he were there alone, would dare to pass along that irregular and slippery causeway, and penetrate to the obscure end of the cave; but numbers animate one another to anything. We clambered along this causeway or corridor, now ascending and now descending, as the broken columns required, and soon stood—upward of seventy of us—ranged along its side from one end to the other. Let it be remembered, that this splendid sea cave is forty-two feet wide at the entrance; sixty-six feet high from the water; and runs into the rock two hundred and twenty-seven feet. Let it be imagined that at eight or ten feet below us it was paved with the sea, which came rushing and foaming along it, and dashing up against the solid rock at its termination: while the light thrown from the flickering billows quivered in its arched roof above us, and the whole place was filled with the solemn sound of the ocean; and if any one can imagine to himself any situation more sublime, I should like to know what that is. The roof is composed of the lower ends of basaltic columns, which have yet been so cut away by nature, as to give it the aspect of the roof of some gigantic cathedral aisle. Lichens of gold and crimson have gilded and colored it in the richest manner. It was difficult to forget, as we stood there, that, if any one slipped, he would disappear for ever; for the billows in their ebb would sweep him out to the open sea, as it were, in a moment. Yet the excitement of the whole group was too evident to rest with any seriousness on such a thought. Some one suddenly fired a gun in the place, and the concussion and reverberating thunders were astounding. When the first effect was gone off, one general peal of laughter rung through the cave, and then nearly the whole company began to sing, 'the sea! the sea!' The captain found it a difficult matter to get his company out of this strange

chantry—where they, and the winds and waves seemed all going mad together—to embark them again for Iona."

How these columns were formed, is a question which geologists have not yet been able to determine. The majority agree in attributing them to an igneous or volcanic origin, and facts seem to preponderate in favor of this side of the question.

An ingenious theorist (Mr. Hill) supposes the material of the columns at Staffa and other places to have been once in a state of fusion in the internal regions of the globe, and that by the expansive force of atmospheric air there confined and highly rarefied by heat, a certain portion of the liquid matter was thrown up through polygonal fissures in the primitive rocks composing a portion of the earth's crust; that coming in contact with the cold water of the ocean the ejected mass was suddenly converted into solid columns as they now appear. To account for the different rows of columns one above another fitting each other precisely, at the joints, and yet detached, he supposes, that a series of these explosions or eruptions have taken place, each throwing the congealed columns higher up, while the last liquid mass was converted into solid columns in the same manner as the first. This is certainly a plausible theory, admitting all matters connected with it to be true. We are not told how these fissures were formed, how they came to be divided by such thin partitions; nor how it is that the secondary rocks and the alluvia which usually cover the primitive rocks, should have corresponding cells, through which the molten basalt might reach the waters of the ocean without losing the columnar form. Such a theory, unsupported as it is by corroborative facts, should receive but little credence.

Mr. Coneybeare, a learned English divine, gives it as his opinion that basalt, whether found in masses of a columnar form like those of Staffa, or laminated like trap-rocks in general, is of volcanic origin, and supports his opinion by the following negative and affirmative testimony:—

1. Of all other formations, the most ancient are the most elevated, while basalt, the most recent of all, rivals in some instances the primitive mountains in elevation.

2. Of all other formations, the degree of consolidation decreases with age, their texture passing from the crystalline through various stages, to the earthy; while in basaltic formations, even where they rest upon chalk, the crystalline texture of the oldest rocks frequently occur.

3. The identity of chymical composition in basalt and lava.

4. The constant occurrence of trap-rocks in volcanic districts.

5. The confessions of those in favor of their aqueous origin that the basalt of Auvergne is one of igneous origin; and

6. The testimony of such men as Dolomieu and Spallanzani, and others best acquainted with volcanic districts, in favor of their igneous origin, against those of the opposite opinion, who are generally practically unacquainted with those regions.

The Rocky Mountains in the Oregon territory, present trap-rocks of great height and vast extent; and all travellers agree that the whole country in the region of these trap-rocks, exhibits evidences of powerful volcanic action at some remote period of the world's history. But even admitting basaltic masses to be of volcanic origin, to determine how the wonderful columns of Staffa have been so regularly formed, will probably for ever baffle the skill of human science.

HOPE AND MEMORY.

A LITTLE babe lay in the cradle, and Hope came and kissed it. When its nurse gave it a cake, Hope promised another to-morrow; and when its young sister brought a flower over which it clapped its wings and crowed, Hope told of brighter ones, which it would gather for itself.

The babe grew to a child, and another friend came and kissed it. Her name was Memory. She said, "Look behind thee, and tell me what thou seest." The child answered, "I see a little book." And Memory said, "I will teach thee how to make honey from the book, that will be sweet to thee when thou art old."

The child became a youth. Once when he went to his bed, Hope and Memory stood by his pillow. Hope sang a melodious song, and said, "Follow me, and every morning thou shalt wake with a smile, as sweet as the pretty lay I sing thee."

But Memory said, "Hope, is there any need that we should contend? He shall be mine as well as thine. And we shall be to him as sisters all his life long."

So he kissed Hope and Memory, as he was beloved of them both. While he slept peacefully, they sat silently by his side, weaving rainbow tissues into dreams. When he awoke, they came with the lark, to bid good morning, and he gave a hand to each.

He became a man. Every day Hope guided him to his labor, and every night he supped with Memory at the table of Knowledge.

But at length, Age found him and turned his temples gray. To his eye the world seemed altered. Memory sat at his elbow-chair, like an old and tried friend. He looked at her seriously, and said, "Hast thou not lost something that I intrusted to thee."

And she answered, "I fear so; for the lock of my casket is worn. Sometimes I am weary and sleepy, and Time purloins my key. But the gems

that thou didst give me when life was new—I can account for all—see how bright they are!"

While they thus sadly conversed, Hope put forth a wing that she had worn folded under her garment, and tried its strength in a heavenward flight.

The old man laid down to die, and when his soul went forth from the body, the angels took it. And Memory walked with it through the open gate of heaven. But Hope lay down at its threshold, and gently expired, as a rose giveth out its last odors.

Her parting sigh was like the music of a seraph's harp. She breathed it into a glorious form and said, "Immortal Happiness! I bring thee a soul that I have led through the world. It is now thine—Jesus hath redeemed it."

Mrs. Sigourney.

MANAGEMENT OF INFANCY.

The justly celebrated Dr. Combe has recently added a small volume to his valuable series of works on Physiology, entitled "A Treatise on the Physiological and Moral Management of Infancy." From it we copy the following remarks concerning the earliest education of children, and we would commend it to the serious consideration of parents:—

"At birth, the brain, which during life is not less essential to the action of the internal faculties than the eye, ear, nose, &c., are to the external senses, is so imperfectly and delicately constituted as to be almost wholly unfit for active mental manifestation; and, accordingly, we meet with none except sensation of bodily pain, and the desire for food. Beyond these, scarcely any trace of activity of mind can be detected; and hence sleep, or the negation of mental action, occupies nearly the whole time. The structure of the brain, however, being then extremely delicate, is very easily disordered, and susceptible of permanent injury, which, as in the similar instances of the eye and the ear, may impair the efficiency of its functions to the end of life; or, in other words, induce permanent idiocy or imbecility.

"Such is the state of the mind and brain for some time after birth. By degrees, however, traces of extended mental activity begin to show themselves, and the appetite for food is no longer the only instinct which seeks for gratification. The infant, by its looks and smiles, gives indications of awakening consciousness long before it can conceive the nature of the cause by which it is excited. In this way it exhibits, even at a very early age, movements which neither sensation nor experience can explain, and which, as is happily remarked by a late acute and elegant writer, are in truth the signs of its dawning affections. 'Even at the early age of six weeks, when the infant is still a stranger to the world, and perceives external objects so indistinctly as to make no effect either to obtain or avoid them, he is nevertheless accessible to the influence of human expression. Although no material object possesses any attraction for him, sympathy, or the action of a feeling in his mind corresponding to the action of the same feeling in the mind of another, is already at work. A smiling air, a caressing accent, raises a smile on his lips; pleasing emotions already animate this little being, and we who recognise their expression are delighted in our turn. Who, then, has told this infant that a certain expression of the features indicates tenderness for him? How could he, to whom physiognomy is unknown, imitate that of another, unless a corresponding feeling in his own mind impressed the same characters on his features. That person near his cradle is perhaps not his nurse; perhaps she has only disturbed him, or subjected him to some unpleasant operation. No matter, she has smiled affectionately on him; *he feels* that he is loved, and he loves in return.'

Here, then, is the true key of the philosophy of infancy, and to the right training of the infant mind. The internal emotions, like the external senses, are distinct from each other, and independent in their action. Present its appropriate object to one whose organ is already sufficiently developed, and it will start into activity, just as the eye does when the rays of light are directed upon the retina. Look at an infant six months old, for example, and observe the extent to which it responds to every variety of stimulus addressed to its feelings. If we wish too sooth it in a moment of fretful disappointment, is it not a matter of notoriety that we succeed by gentle fondling, and singing to it in a soft and affectionate voice? If our aim is to rouse it to activity, are not our movements and tones at once changed to the lively and spirited? When inadvertently, an acrimonious dialogue ensues between the nurse and any other person in the presence of an infant, is it not a common occurrence for the child to become as uneasy as if the scold was directed to itself, and forthwith begin to cry? If, on the other hand, an affectionate and gentle-tempered mother enters a nursery, and imagining the infant to be asleep, merely addresses the nurse in the soft tones characteristic of her mind, do we not instantly see the infant waken up, and with a placid smile look around to solicit the notice of its parent? Or, to use one more example, if a disagreeable, ill-tempered, coarse-looking person, happens suddenly to approach an infant, are not the instantaneous results an exclamation of terror, and a clinging to the mother's bosom for protection.

It is astonishing, indeed, from what an early age a faculty will respond to its stimulus, whether that stimulus be direct or only from sympathy. Madame Necker de Saussure gives an affecting example of this fact, which she witnessed in a child of nine months old. "The child was gayly playing on its mother's knees, when a woman, whose physiognomy expressed deep but calm sadness, entered the room. From that moment the child's attention was wholly fixed on the person, whom it knew, but for whom it had no particular affection. By degrees its features became

calm then sad; its playthings dropped from its hands and with its bosom throbing violently it clung to its mother's arm. It felt neither fear nor pity; it knew not why it suffered, but it sought for relief in tears." Facts like these show how careful we should be in duly regulating the moral as well as physical influences by which infancy is surrounded.

It has often been affirmed, that bad temper, strong passions, and even intellectual peculiarities, are communicated to the infant *through the medium of the mother's or nurse's milk*, and that hence it is of great consequence, in choosing a nurse, to select one of a cheerful and amiable character. But, while admitting that the quality of the milk may exert an influence, I am disposed to believe, that the effect upon the child is caused more especially by the natural action of the evil passions stirring up, and, in a manner, educating the corresponding passions in the child. Many sensible people imagine that they may say or do anything in the presence of an infant, because it is too young to observe or to be affected by it. This, however, is a great mistake. It is true that an infant may be unable to form an intellectual opinion on any occurrence; but it is not less true, that, from a very early period, as shown by Madame Necker de Saussure, its feelings respond to the calls made upon them, and thus give a bias to the mind long before the child can exercise any act of judgment.

Let us, then, not deceive ourselves, but ever bear in mind, that what we desire our children to become, we must endeavor to be before them. If we wish them to grow up kind, gentle, affectionate, and true, we must habitually exhibit the the same qualities as regulating principles in our conduct, because these qualities act as so many stimuli to the respective faculties in the child. If we cannot restrain our own passions, but at one time overwhelm the young with kindness, and at another surprise and confound them by our caprice or deceit, we may with as much reason except to gather grapes from thistles, or figs from thorns, as to develop moral purity and simplicity of character in them. It is vain to argue that, because the infant intellect is feeble, it cannot detect the inconsistency which we practise. The feelings and reasoning faculties being perfectly distinct from each other, may, and sometimes do, act independently, and the feelings at once condemn, although the judgment may be unable to assign a reason for doing so. Here is another of the many accurable proofs which we meet with in the animal economy of the harmony and beauty which pervade all the works of God, and which render it impossible to pursue a right course without also doing collateral good, or to pursue a wrong course without producing collateral evil. If the mother, for example, control her own temper for the sake of her child, and endeavor systematically to seek the guidance of her higher and purer feelings in her general conduct, the good which results is not limited to the consequent improvement of the child. She herself becomes healthier and happier, and every day adds to the pleasures of success. If the mother, on the other hand, gives way to fits of passion, selfishness, caprice, and injustice, the evil is by no means limited to the suffering which she brings upon herself. Her child also suffers both in disposition and in happiness; and while the mother secures, in the one case, the love and regard of all who come into communication with her, she rouses, in the others, only their fear or dislike.

THE TEACHING OF THE SENSES.

The eye is but a grated pane,
Through which the clay-imprisoned soul
Looks dimly forth on earth and sky,
Yet deeming all a heaven-writ scroll.

We gaze and gaze, and sometimes dream
That these may satisfy the heart;
But, lo! an after-longing comes,
Which makes the cheated dreamer start.

We feel that these are signs—not things
Prophetic visions cast before;
And yearning fancy turns to faith,
Making us sure of something more.

The ear doth catch sweet tones around
From woman's tongue and Eol's choir;
Yet this earth-music is but one
Sweet, stolen string from heaven's lyre.

And this is whispered to the heart;
For, though the raptured sense be blest
With song, a yearning wish will rise
For something still to fill the breast.

The rose regales, yet seems to cheat,
Not satisfy, the sense it woos;
The jaded palate turns away
From that which first it seemed to choose.

The nerve with sweet sensation thrills;
Yet languor comes to claim its turn,
And leaves the sickened soul within
For something better still to yearn.

Thus every sense exalts the soul,
Bestows a transient draught of bliss,
Then breaks the cup, to make us thirst
For surer, purer joys than this.

They lift us to the mountain top,
Where earth and heaven in contrast lie,
And bid us spurn this lower sphere,
And spread the wing for yonder sky!

Token for 1841.

SUNDAY EVENING.

Oh! if there be an hour that brings
The breath of Heaven upon its wings,
To light the heart, to glad the eye,
With glimpses of eternity;
It is the hour of mild decay,
The sunset of the Sabbath-day.

For then to earth a light is given,
Fresh flowing from the gates of heaven;
And then on every breeze I hear
Angelic voices whispering near;
Through veiling shades glance seraph eyes,
One step—and all were paradise!

NATURAL HISTORY.

Cone of the Stone Pine.

Stone Pine.

The stone pine which abounds in the mountains of Lebanon and other parts of Palestine, is more highly esteemed than any other of the genus Coniferæ. The cone represented above, measures about four inches in length and about three in diameter, and contains within its scales an edible nut extremely sweet and wholesome. The scales are polygonal, with an umbilicated or depressed crown, and before they become expanded, they form beautiful mosaic work. The meat of the nuts resemble the almond in taste, but is considered far more wholesome.

The leaves of this species of pine, are confined in pairs within a membraneous hose or sheath at the base, and are five or six inches long. The male flowers occur in large red clusters at the extremity of the branches, and form an elegant setting off with the verdure around them. These male flowers are accompanied by the fertile cones, so that both conspire to ornament the same branch. The tree attains to a great height when in full prosperity, and illustrates in a striking manner the comparison used by the sacred Penman, "I am like a green fir-tree. From me is thy fruit found."

The stone pine of Lebanon, represented in the engraving is not the only species of the coniferæ family that produces an edible nut. The Siberian stone pine (which flourishes also in Switzerland, affords the Tartars and Swiss a most delightful and wholesome dessert. The leaves are clustered in fives and the flowers present a most beautiful appearance. The kernel within each nut is about the size of a pea. The tree wears a very showy aspect, delights in marshy places, and yields a timber that has a finer grain than the common deal.

BRITISH REPTILES.

Singular as it may appear, but *one* of the *Colubridæ* is found in Great Britain—the natrix torquata, common snake; which, we are here told, "inhabits most of the countries of Europe, from Scotland and the corresponding latitude of the continent to Italy and Sicily." The following curious anecdote is related of the manner in which they manage their prey and each other: "On placing a frog in a large box in which were several snakes, one of the latter instantly seized it by one of the hinder legs, and immediately afterward another of the snakes took forcible possession of the fore leg of the opposite side. Each continued its inroads upon the poor frog's limbs and body, until at length the upper jaws of the two snakes met, and one of them in the course of its progress slightly bit the jaw of the other; this was retaliated, though evidently without any hostile feeling; but after one or two such accidents, the most powerful of the snakes commenced shaking the other, which still had hold of the frog, with great violence, from side to side against the sides of the box. After a few moments' rest, the other returned the attack; and at length, the one which had last seized the frog, having a less

firm hold, was shaken off, and the victor swallowed the prey in quiet. No sooner was this curious contest over, than I put another frog into the box, which was at once seized and swallowed by the unsuccessful combatant." Our author, immediately after relating this anecdote, observes: "The frog is generally alive not only during the process of deglutition, but even after it has passed into the stomach. I once saw a very small one, which had been swallowed by a large snake in my possession, leap again out of the mouth of the latter, which happened to gape, as they frequently do immediately after taking food. And on another occasion, I heard a frog distinctly utter its peculiar cry several minutes after it had been swallowed by the snake." This reminds us of the anecdote related by Harlan, who, speaking of the tenacity of life exhibited by the *Rana clamata*, observes: "A dog of Mr. Bartraman's having accidentally swallowed one of these animals, it was observed to struggle and cry piteously for at least *half an hour*, to the great diversion of the spectators, and no small confusion of the dog, who was at a loss to comprehend this species of intestinal eloquence." Like many of our snakes, the *torquata* may be easily tamed; our author remarks: "I had one many years since, which knew me from all other persons; and when let out of his box, would immediately come to me, and crawl under the sleeve of my coat, where he was fond of lying perfectly still, and enjoying the warmth. He was accustomed to come to my hand for a draught of milk every morning at breakfast, which he always did of his own accord; but he would fly from strangers, and hiss if they meddled with him." Many of the members of this Society undoubtedly remember having seen, several years since, accounts in the newspapers of snakes being carried to Ireland, and that they were increasing there. The facts connected with this attempt to introduce these animals into Ireland are thus clearly shown by a letter to the author from Mr. Thompson: "In this order (*Ophidia*) there is not now, nor I believe ever was there, any species indigenous to Ireland. In the Edinburgh New Philosophical Journal for April, 1835, it is remarked, 'We have learned from good authority that a recent importation of snakes has been made into Ireland, and that at present they are multiplying rapidly within a few miles of the tomb of St. Patrick.' I never," proceeds Mr. Thompson, "heard of this circumstance until it was published, and subsequently endeavored to ascertain its truth, by inquiring of its persons about Downpatrick (where the tomb of St. Patrick is), who are best acquainted with these subjects, not one of whom had ever heard of snakes being in the neighborhood. Recollecting that about the year 1831 a snake (*natrix torquata*), immediately after being killed at Milecross, was brought by some country people, in great consternation to my friend Dr. I. L. Drummond, I thought this might be one of those alluded to, and recently made inquiry of James Cleland, Esq., of Ruth Gael House (County Down), twenty-five miles distant in a direct line from Downpatrick, respecting snakes said to have been turned out by him; I was favored by that gentleman with the following satisfactory reply: 'The report of my having introduced snakes into this country is correct. Being curious to ascertain whether the climate of Ireland was destructive to that class of reptiles, about six years ago I purchased half a dozen of them in Covent-Garden market, in London; they had been taken some time, and were quite tame and familiar. I turned them out in my garden; they immediately rambled away; one of them was killed at Milecross, three miles distant, in about a week after its liberation, and three others were shortly afterward killed within that distance of the place where they were turned out; and it is highly probable that the remaining two met with a similar fate, falling victims to a reward which it appears was offered for their destruction.'"

Beside the *Natrix torquata*, but one more of the *Ophidia* is noticed; the *Pelus Berus*, common adder; which, to use the words of our author, "is the sole British representative of any of the poisonous groups of serpents, and indeed the only poisonous reptile indigenous to this country."

The history of the *Rana temporaria*, common frog, is very interesting; the changes which take place in its development from the *ovum* to the perfect animal, are pointed out with a clearness which shows how well they are understood by the describer. In a pleasing anecdote, our author proves its capability of being tamed; he states that his friend, Dr. Wm. Roots, of Kingston, informed him, "that he was in possession for several years, of a frog in a perfect state of domestication. It appears that the lower offices of his house were what is commonly called underground, on the banks of the Thames. That this little reptile accidentally appeared to his servants occasionally issuing from a hole in the skirting of the kitchen, and that during the first year of his sojourn, he constantly withdrew upon their approach; but from their showing him kindness, and offering him such food as they thought he could partake of, he gradually acquired habits of familiarity and friendship; and during the following three years, he regularly came out every day, and particularly at the hour of meal-time, and partook of the food which the servants gave him. But one of the most remarkable features in his artificial state of existence, was his strong partiality for warmth, as during the winter seasons he regularly (and contrary to the cold-blooded tendency of his nature) came out of his hole in the evening, and directly made for the hearth in front of a good kitchen fire, where he would continue to bask and enjoy himself until the family retired to rest. There happened to be at the same time a favorite old domestic cat, and a sort of intimacy or attachment existed between these two incongruous inmates; the frog frequently nestling under the warm fur of the cat, while the cat appeared extremely jealous of interrupting the comforts and convenience of the frog. This curious scene was often witnessed by many beside the family."

The manner in which the *Bufo vulgaris* (common toad) sheds its cuticle, is described very instructively: "Having often found, among several

toads which I was then keeping for the purpose of observing their habits, some of brighter colors than usual, and with the surface moist and very smooth, I had supposed that this appearance might have depended upon the state of the animal's health, or the influence of some peculiarity in one or the other of its functions; on watching carefully, however, I one day observed a large one, the skin of which was particularly dry and dull in its colors, with a bright streak down the medial line of the back; and on examining farther, I discovered a corresponding line along the belly. This proved to arise from an entire slit in the old cuticle, which exposed to view the new and brighter skin underneath. Finding therefore what was about to happen, I watched the whole detail of this curious process. I soon observed that the two halves of the skin, thus completely divided, continued to recede farther and farther from the centre, and became folded and rugose; and, after a short space, by means of the continued twitching of the animal's body, it was brought down in folds on the sides. The hinder leg, first on one side and then on the other, was brought forward under the arm, which was pressed down upon it, and on the hinder limb being withdrawn, its cuticle was left inverted under the arms, and that of the anterior extremity was now loosened, and at length drawn off by the assistance of the mouth. The whole cuticle was thus detached, and was now pushed by the two hands into the mouth in a little ball, and swallowed at a single gulp."

Four species of *Salamandridæ* are described in the volume before us. The history of the *Triton cristatus*, common water-newt, is very elaborate; our author has carefully made the same observations as Rusconi, and adds his testimony to the value of that writer's investigations with regard to the development of this species. We are here told that Spallanzani supposed that the eggs when deposited fell at once to the bottom of the water, and that "Cuvier asserts that they are produced by several at a time, attached to each other like beads." Now, although Rusconi first published an accurate account of this process, our author had several times personally observed it before he was acquainted with Rusconi's book. It appears that the egg, instead of being carelessly dropped, is most curiously guarded. "The female, selecting some leaf of an aquatic plant, sits as it were upon its edge, and folding it by means of her two hinder feet, deposites a single egg in the duplicature of the folded part of the leaf, which is thereby glued most securely together, and the egg is thus effectually protected from injury."

Dr. Storer's Report on Bell's "British Reptiles."

BEARDED REED-BIRD.

This most elegant and truly beautiful bird is an inhabitant of large reedy tracts in various situations both of Europe and Asia, being found in Sweden and other northern countries, and plentifully along the reedy borders of the Caspian sea; though nowhere in such abundance as in Holland. In England it inhabits the fenny districts of Norfolk and Cambridgeshire, where it is not uncommon; and is found also in the Essex marshes, and in those of Sussex, bordering on the sea; also in Gloucestershire, Lancashire, and Cornwall. It has likewise been seen near Paisley, in Scotland.

Reed-bird.

It is a small species; but from the very great length and thickness of its plumage, and the length of its tail and legs, it appears when alive almost as large as a robin. The bill is small and delicate, somewhat of the form of the titmice (*Parus*), but much weaker, and more arcuated, and the upper mandible is slightly curved, and pointed; of a rich yellow color inclining to orange, but fading almost immediately after death. Irides, fine yellow; in the young of the year, white, with a yellowish tinge. Between the bill and eyes is a tuft of pendent pointed feathers on each side, forming a kind of mustaches; glossy jet black in the male, and of the same color with the surrounding plumage in the other sex. The head, neck, and breast of the male, of a beautiful pure bluish gray; the latter softly teinted with purplish black; chin and throat very pale ash-gray, almost white; flanks yellowish brown; the back and tail a very rich yellowish brown, inclining to orange, forming a fine contrast with the gray neck; scapulars wood-brown; greater quills blackish gray, having their outer webs edged with white; secondaries edged with orange-brown; tail long, and very wedge-shaped, the exterior feathers having their outer webs and tips pale reddish white, under tail-coverts jet black, legs and toes black; in the female, the chin, breast, and sides of the neck, are whitish, with a slight tinge of pink; crown of the head, wood-brown; the occiput sometimes spotted with black; back yellowish brown, in some having a list of blackish spots down the middle; vent, and under tail-coverts, pale yellowish, inclining to wood-brown. The young of the year resemble the adult female, excepting in the color

of the iris, and in having a very broad black line along the back.

A correspondent of the Magazine of Natural History observes: "The bearded titmouse (reed-bird) inhabits the marshes bordering on the Thames, both in Kent and Essex. I was told in December last that some had been seen in a large piece of reeds below Barking creek; and being desirous of observing them in their haunts, I went out, accompanied by one person and a dog, to the abovenamed place, on a cold windy morning; the reed-cutters having commenced their operations, I was fearful of deferring my visit, lest my game might be driven away. Arrived on our ground, we traversed it some time without success, and were about to leave it, when our attention was aroused by the alarm cry of this bird. Looking up, we saw eight or ten of these beautiful creatures on the wing, just topping the reeds over our heads, uttering in full chorus their forcibly musical note, which resembles the monosyllable *ping, ping*, pronounced at first slow and single, then two or three times in a more hurried manner, uttered in a clear and ringing, though soft tone, which well corresponds with the beauty and delicacy of this bird. Their flights were short and low, only sufficient to clear the reeds, on the seedy tops of which they alight to feed, hanging, like most of their tribe (that is, like the various titmice), with the head or back downward. If disturbed, they descend by running, or rather by drooping. The movement is rapid along the stalk to the bottom, where they creep and flit, perfectly concealed by the closeness of the covert, which resembles the teint of their plumage. After some time we were fortunate enough to shoot one, a male in fine plumage. I held it in my hand when scarcely dead. Nothing could exceed the beauty of the eye; the bright orange of the iris, surrounded by the deep glossy black of the mustaches and streak above, receives additional brilliancy from the contrast, and struck me as a masterpiece of color and neatness."

VINCENT DE PAUL.

Vincent de Paul was born in the year 1576, at Ranquines, a little hamlet or Pouy, not far from the Pyrenees. Pouy is in the diocess of Acqs and department of Landes. Vincent's parents were owners of a cottage and some fields; and he, the third son in a family of six children, was employed in his youth to take charge of the few sheep and swine which constituted a chief portion of the available property of a poor but industrious household.

A son of one of the peasants of Pouy, poorer even than Vincent's family, had entered the church, rose in his profession, obtained a priory, and provided for his relations. Vincent, in his youth, exhibited traits of a thoughtful and intelligent mind. His parents asked themselves why might not he rise in the church as well as their neighbor's son, and do good in after-life for his brothers and sisters, or even for themselves, when old age would enfeeble them? He was therefore sent to school in the town of Acqs; and by the time he was sixteen years of age, procured a situation in the family of a magistrate of Pouy as tutor, and was thus enabled to reduce the expenses of his own family in contributing to his education. But his father, on his deathbed, enjoined his family to continue their exertions to enable Vincent to complete his studies. Sir Walter Scott has made the fact of the prevalence of a similar feeling in Scotland familiar to his readers. It prevails also very strongly among the small farmers of Ireland. None but those who have actually witnessed it can comprehend the extent to which it is carried. We have known a hard-working mechanic denying himself the commonest enjoyments, and the rest of the family submitting to hard fare with scarcely a murmur, that the favorite *bookish* son might be enabled to go through the university.

Vincent did realize his family's hopes by becoming an eminent man; but they were disappointed in other respects. Many years after his father's death, when he had risen to considerable distinction, he visited Pouy, and took up his abode with the cure of the village. He then assembled his relations together, told them that it was his determination to live and die a poor man, and that it was his conviction that money given by ecclesiastics to their families seldom prospered. He conjured them, therefore, to remain contented with their lot. "At a subsequent time, hearing they were in great distress, he distributed among them a legacy which had been bequeathed to him of about one hundred pounds English money. This, with the present of a few shillings, which he once made his brother, was, notwithstanding very large sums passed through his hands, all the temporal aid which his family received from him."* This, however, was carrying disinterestedness to an extreme. A man who has been assisted, by the self-denial of his family, to attain an elevated position, owes them a debt, which, if judiciously and honestly discharged, may confer very substantial benefit on them, and not be in consistent with a wider culture of beneficence.

Vincent went to Toulouse, and entered the university; but finding his finances insufficient, he opened a school in the neighboring village of Buset. "He continued," says the "Biographie Universelle," "during seven years alternately master and scholar; giving lessons to acquire the means of living, and receiving, at the same time, the learning necessary to qualify him as an ecclesiastic." In 1660, when he was twenty-four years of age, he was ordained by the Bishop of Perigueux.

Five years afterward he went to Marseilles to receive a legacy which had been left to him. Intending to return to Toulouse he was induced by a friend to embark with him on board a felucca which was about to sail from Marseilles across the gulf of Lyons to Narbonne. "I embarked," said Vincent, in a letter written in 1607, "for

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* "Life of Vincent de Paul," by Charles Butler, Esq.

Vincent de St. Paul.

Narbonne, with the intention of saving both time and money: but I should rather say, never to reach it, and to lose all." Three Tunisian corsair-ships, which were cruising off the coast in the gulf, for the purpose of plundering vessels going to or returning from the celebrated fair of Beaucaire on the Rhone, discovered them, and gave chase. The crew and passengers of the felucca attempted a defence, in which several persons were killed on both sides, and Vincent himself was wounded with an arrow. The pirates, on boarding the vessel, enraged by the resistance which had cost them the lives of four or five of their rowers, cut down the captain o the felucca, and put the crew and passengers, all of whom were wounded, in chains. After remaining seven or eight days in the gulf of Lyons, during which they plundered several other vessels, "giving, notwithstanding, liberty to those who made no resistance, after they had robbed them," the pirates sailed for Tunis, on reaching which, in order to escape the interference of the French consul, they drew up an act of the seizure, in which they falsely stated that Vincent and his companions had been taken from a Spanish vessel.

Vincent describes the sale of himself and companions at Tunis, a process, the particulars of which have been much the same, whether the persons sold were white or black. The merchants who came to buy them examined them, he says, as they would "a horse or cow." He was sold to a fisherman, who, not finding him of much use, sold him again to an old physician, a medical alchymist, "a great extracter of essences," and who had been for fifty years in search of the philosopher's stone. But he was better than this—"a man very humane and tractable." The kind-hearted old man found out that Vincent was learned and intelligent, and therefore labored with great assiduity, by dint of long lectures, to convert him to a belief in alchymy and Mahometanism. But not even the temptation of inheriting the physician's wealth could induce Vincent to avow a belief which he did not entertain; he "held fast his integrity," and to the credit of the old man's tolerating spirit be it told, that he did not treat his slave any the worse for his perseverance in what doubtless seemed ignorance and obstinacy. Vincent lived with this master from September, 1605, till August, 1606. The physician was called upon to travel, and died on the road; and Vincent, with his old master's goods, passed into the possession of a nephew, a man whose character was the reverse of that of

his uncle's. He did not suffer long from his inhumanity. A rumor prevailed that the French ambassador was coming, armed with power from Constantinople, to recover the Christian slaves; and the crafty Mussulman got rid of Vincent profitably, by selling him to a native of Nice who had settled in Africa, and had embraced Mahometanism. This man sent him out to his farm, "on a mountain, in a hot and desert country." One of his master's wives was a Turkish lady, and evidently must have been a woman of some intelligence and activity of mind. Curious to know something of the Christians, she used to follow Vincent into the fields, and interrupted his labor by her questions.

One day she asked him to sing one of the sacred songs of the Christians. "The recollection," says Vincent, on whose authority all this portion of his life was told, "of the 'Quomodo cantabimus in terra aliena' of the children of Israel, captives in Babylon, made me commence, with the tear in my eye, the Psalm 'Super flumina Babylonis,'* and then the 'Salve Regina,' and several others." The lady was delighted and astonished; she told her husband in the evening that he had done wrong in abandoning the Christian religion, which she thought extremely good, and that the paradise of the Christians seemed to her a more glorious and happy one than that of her fathers. Her husband was struck with remorse; next day he told Vincent, that as soon as he could arrange his affairs he would make his escape with him. Six months afterward they returned across the Mediterranean in a small boat and landed safely at Aigues-Mortes on the 28th of June, 1607. From that place they went on to Avignon, where the renegade made his public recantation in the church of St. Peter. We are not told what became of the lady. Vincent terms her "another Caiaphas, or as the ass Balaam," an instrument of conveying truths which she did not herself comprehend. But she deserves a far higher character.

The vice-legate, in whose presence the recantation had been made, carried Vincent and his companion with him to Rome. Here the reconverted man entered a convent; and Vincent was presented to the Pope, and was introduced to the ambassadors of the French king at Rome. They sent him to Paris on a mission of some importance, where he arrived in the beginning of 1609. This procured him several interviews with Henry IV.

On his arrival in Paris, he took up his residence in the Faubourg St. Germain near the Hopitâl de la Charité. He now devoted all his leisure to the service of the sick in the hospital—and from this period may be dated the commencement of that career of active benevolence which distinguished his long life. His patience and strength of character were put to a severe test about this period. While travelling in the Bordelois, he lodged at Sore. A magistrate who occupied the same apartment was robbed of a sum of money, and accused Vincent as the thief. As his name had become somewhat public, from his singular adventures, the accusation became generally known. There was no proof that he had been guilty; yet the imputation hung over him for six years. The real thief being imprisoned for another offence, confessed; and Vincent's accuser cleared his character by making him a public reparation.

In 1611, he was made cure of Clichy, near Paris, where he acquired his first ministerial reputation. The general standard of character among the great body of the French clergy was at that time very low; and the spectacle of a priest devoting his whole faculties to the duties of his office and preaching with great earnestness and zeal, drew marked attention toward him. He raised subscriptions among the opulent friends for the rebuilding of his parish church; and established a society or confraternity for the purpose of visiting and relieving his poor parishioners.

In 1613, he quitted his charge and entered into the family of Philip Emanuel de Gondi, Count de Joigni, general of the galleys of France, for the purpose of educating the three sons of the count. This employment opened to Vincent a new sphere of life and a new field of labor. The following is a characteristic trait; the count, one morning, preparatory to s ng out to fight a duel, attended mass. Vincent having become aware of his intention, took an opportunity, when the service was finished, of seriously remonstrating with him on the nature of his undertaking. The remonstrance was effectual; the count sent to inform his adversary that he declined meeting him. We may here mention that, during the period of his residence in the family of the Count de Joigni, a brief interval occurs, in which he acted as cure of Chatillon, in Bresse, where, owing to the fearful ignorance, depravity, and poverty, that prevailed, his exertions, especially during the prevalence and famine, endeared him to the inhabitants.

As commander of the royal galleys, the Count de Joigni had occasion frequently to visit Marseilles, and Vincent very often accompanied him. The situation of the unhappy criminals condemned to the galleys, was at this time most horrible. When the galleys were not ready to receive them, they were crowded into dungeons, with very little air or light, and were fed on bread and water. Covered with vermin, ignorant and ferocious, they seemed more like savage beasts than human beings. Vincent began the work of reformation by introducing himself to the criminals as their friend, one who felt for their sufferings, and was anxious to relieve them. He soon gained their confidence; the improvements which he effected induced the count to mention the matter to Louis XIII., who made Vincent almoner-general of the galleys of France; and he received large subscriptions to enable him to carry forward his charitable designs.

The amelioration of the condition of the criminals condemned to the galleys was the first great work of Vincent de Paul: the establishment of his missionary college was the second. In this work he was efficiently supported by the Count and Countess de Joigni. The "congregation of the mission" was intended to afford a supply of teachers for the inhabitants of the French provinces, the members of which were considered as auxiliaries to the regular clergy, and were to act

* The 137th of our version, "by the rivers of Babylon." &c.

in subordination to the authorities of the church. The project was formally approved by the Pope. The infant institution took up its first residence in the college des Bons-Enfans, and afterward in the priory of St. Lazarus. The beginnings of the institution were small: but Vincent lived to see his "Lazarist" missionaries visiting the Hebridies, Ireland, Madagascar, &c.,and to be able to exclaim, in his old age, "Behold it now spread over the whole world." But not only did he exert himself for the laity: he labored to reform the clergy, the depravation of whose manners, he said, was "a principal cause of the ruin of the church." We may dissent from his opinions, and withhold our approbation from the manner in which he carried out some of his numerous projects, as deficient in judgment and effectiveness; but no man can refuse him the praise of uniting in his character the spirit and activity of a Howard and a Wesley. Had there been more men of his stamp in France, the horrors of the first French revolution might have been greatly mitigated.

During the reign of Louis XIII., Vincent de Paul was in high reputation. He attended that monarch in his last illness. His example stimulated both the really charitably-disposed, and those who were actuated by the mere impulses of vanity; the latter class was by far the most numerous, and often smothered the good that existed in many of the schemes that were projected. Under the sanction of Vincent, Mademoiselle le Gras began the institution of Les Sœurs Grises (so called from the dress which they wore, which was gray), better known to the English reader as the Sister of Charity. He also established a religous association of ladies for the service of the poor in the Hotel Dieu; and moved by the consideration of the number of infants which, in the middle of the seventeenth century, were exposed in the streets of Paris, he procured the assistance of the ladies and the Sisters of Charity, to establish the hospice des Enfans Trouvés, or Foundling hospital. During the reign of Louis XIII., a large portion of France was exposed to all the horrors of war, pestilence, and famine. For successive years Vincent de Paul exerted himself with untiring perseverance, raised large sums of money, with the distribution of which he was entrusted, and which he regularly remitted to Picardie, Champagne, and Lorraine, for the relief of the inhabitants. At one time he obtained an interview with Richelieu, and after representing the frightful state of the country, besought him to "give peace to France." The haughty minister was touched, he dismissed Vincent kindly, assuring him that peace would soon be obtained, if it depended only on his own wishes.

During the minority of Louis XIV., the queen-regent, Anne of Austria, instituted an ecclesiastical council, composed of the Cardinal Mazarin, the Chancellor, the Grand Penitentiary of Paris, and Vincent de Paul: the latter was appointed its president. But though he was honest, plain, and of a mild disposition, he occasionally felt what it was to be exposed to the rivalries and intrigues of courtiers; and his strong attachment to the sacerdotal authority, an attachment which he evinced by implicit submission to all whom he considered his spiritual superiors, involved him in controversy with the Jansenists.

Vincent de Paul died in 1660, aged 84, at the House of St. Lazarus, the headquarters of his missionary establishment. He was canonized by Pope Clement XII., in 1737.

ON THE EFFECTS OF ARTS, TRADES, AND PROFESSIONS, AS WELL AS HABITS OF LIVING, ON HEALTH AND LONGEVITY.

BY CHARLES A. LEE, M. D., NEW-YORK.

No. I.

One of the distinguishing characteristics of our countrymen is the possession of a high inventive genius. In almost every department of art there are numerous ardent and successful cultivators. Competition excites to industry; emulation begets excellence; success insures reward: the government stretches forth her fostering arm; and private as well as public patronage stimulates to the attainment of superior skill and eminence. Previous to January, 1840, more than 11,500 patents had been issued from the United States Patent Office; a mere digest of which, just published, forms an octavo volume of 750 pages. During the year 1839, more than 800 applications for patents were made at the Patent Office, of which more than half were granted. At the last annual fair of the Mechanic's Institute in this city, premiums were awarded for specimens of manufactures in 115 different departments of art; and at the fair of the American Institute, a still larger variety of distinct branches of manufacturing skill was exhibited. If these results do not show that we are actually in advance of foreign nations, they certainly indicate a progress unequalled in the history of civilization. It is but sixty-four years since we first declared ourselves independent; previous to which time we were indebted to Great Britain for nearly all our manufactures. But should war now close our ports, and put an end to commercial exchanges, we should hardly experience the loss of a single article which we have hitherto procured from abroad. Already do our cotton fabrics compete with those of England in foreign markets; our locomotives are in demand on all the railroads of Europe; the civil engineering on our canals and other public works has been carried to so high a pitch of excellence, that deputations of scientific men have been sent out by several foreign governments to survey and report on these improvements. In a few years we shall be independent of all other nations for our silks and woollens; even our sugar will be supplied to a great extent from the beet and maple; and possessing as we do nearly every climate within the broad range of our extended territory, we may if we choose, and we shall if it is our interest, raise and manufacture within ourselves, nearly every article of use or luxury known to the wants or caprices of man.

What we call the arts, are merely the result of the application of the principles of science, and they have accordingly sprung from a knowledge

of these principles and an acquaintance with the relations of cause and effect. And how has the development of these arts changed the aspect of our globe, given new direction to the industry, and added untold wealth to the resources of nations! Sixty years ago, and the composition of the air we breathe and the water we drink was unknown; the machinery that weaves our clothing had not been invented; steam had scarcely begun to perform its miracles; gas light had not exhibited its splendors; railroads were scarcely heard of; people were neither acquainted with the elements by which they were surrounded, nor knew how to convert them to their own purposes. Geology was then only another name for a system of absurd hypotheses; analytical chymistry had no existence; electro-galvanism had not yet revealed its wonders; experimental physiology was unknown; and phrenology, or the doctrine of the nervous system, had not dawned upon the world. Within the memory of man new arts have sprung up; new sciences been created; and innumerable practical inventions have given a new aspect to human society. Labor has been superseded; expense abridged; time saved; public comfort enhanced; national wealth increased; education promoted; and the welfare and happiness of man exalted.

But in the attainment of these important results, has there been no sacrifice? Have no physical or moral evils attended the various processes of manufacturing art and mechanic labor? These are important questions; for if, on examination, we should find that they have been attained at the expense of health and life, we might well pause and ask, whether it is right to purchase them at such a cost. The pursuits of commerce too, we know, are in a high degree dangerous, and multitudes of adventurous seamen annually perish in procuring for us the productions of other lands. So also in subduing new and uncultivated regions, the agricultural laborer often encounters numerous hardships and perils; he often suffers the loss of health, and perhaps perishes of fever, the prevailing disease of such countries. In both cases, the dangers are to some extent unavoidable; they are the price which the sailor and the farmer are willing to pay for future ease and competence. But many of these evils might be escaped, and most might be alleviated, with proper knowledge and caution. The dangers of the sea have been more than quadrupled through the agency of intoxicating drinks; and thousands annually fell victims to unwholesome food, bad air, and filthy habits, before Cook and other commanders demonstrated the conservative influence of ventilation, cleanliness, and wholesome diet. The scurvy, at a period not remote, swept away a great portion of the crews of whole fleets; and the ship-fever was scarcely less fatal; but both of these are now rarely to be met with, and never where proper precautionary measures are adopted. So also in the manufacturing and mechanic arts, the health of artificers has suffered, and life itself been sacrificed, through ignorance or neglect of a few simple rules, or want of acquaintance with a few principles of general application. All other science has been deemed important but the science of life; all other knowledge valuable but that relating to health. Physiology, in which every individual is interested, instead of being generally studied, and becoming the science of the multitude, has been considered as the exclusive domain of the medical man; and the consequence has been, in innumerable instances, the loss of health and even of life. Operatives suffer not only from too long and close confinement to their labors, but from a confined and impure atmosphere, subjected to dust, odor or gaseous exhalations, to wet and vapor, to sudden changes of temperature; from the cramped and unnatural position in which their manipulations are carried on; from intemperance, unhealthy diet, mental anxiety, and other causes. Various accidents are incidental to some manufacturing processes, and great caution is necessary to guard against injuries from machinery; and after all, many fall victims to this cause. In some instances, the *skin* is constantly exposed to injurious agents, as among *potters*, *grocers*, *hatters*, *silverers of mirrors*, *&c.*; in others, the *lungs* suffer most, from exposure to the noxious agent, as among *millers*, *malsters*, *tobacconists*, *paper-makers*, *feather-dressers*, *weavers*, *hatters* employed in the *bowing* department, *workers in flax*, *cabinet-makers*, *masons*, *ware and file-grinders*, *colliers*, *miners*, *machinists*; *workers in wood*, *ivory or metal*; *brass-founders*, *painters*, *plumbers*, *manufacturers of white lead*, *braziers*, *tin-plate workers*, *coppersmiths*, *gas-makers*, *rectifiers and distillers*, *paper-stainers*, *button-makers*, *looking-glass makers*, *jewellers*, *chymists and druggists*, *bleachers*, and many others. Many suffer from the cramped position in which their work is carried on; as *tailors*, *shoemakers*, and *engravers*; others from the heat to which they are exposed, as *glass-workers*, *iron* and *brass founders*, *smiths*, *sugar-refiners*, *cooks* and *confectioners*, *bakers*, and those engaged in some of the departments of *cloth manufacture*.

The importance of our subject will appear still more obvious, when we consider that nearly our whole population belong to the working class; for professional men—the lawyer, the physician, the clergyman—are no less working men than the artisan and the manufacturer; and there is, happily, no class among us exempt from labor but the very young, the aged, and the invalid. We have no aristocracy of wealth or honor. No man, however high his station, or distinguished his reputation, can say to the sons of the poor mechanic, "I am what you can never be." Although manufactures have flourished to a considerable extent in our country, yet we cannot, like England, be called a manufacturing nation. Of none of our children can it be said as has been said of the latter, "born to labor, they are doomed to the factory almost before they are begotten, and the squalid urchin picking flax or cotton is the type of the future man." Nor of our agriculturists, that "they are represented by the gaunt yet abject being whom the open day sees crawling from the plough-tail to the poor-house." A degree of comparative comfort and happiness is found among every class of our citizens; but it does not hence follow

that there are no evils to be removed, and no abuses corrected. We hope to be able to make it appear, in the course of these essays, that with the same and even greater economical results, the health, the physical and moral well-being of all classes of our population can be vastly enhanced; that from either ignorance or inattention, the effects of arts, trades, and occupations, upon the health and longevity of our citizens have been more injurious and unpropitious than the necessity of the case requires; and consequently that their happiness and prosperity are susceptible of improvement. In doing this, a variety of topics will necessarily come under consideration beside those which we have pointed out; such as habits of living, including dress, food and drinks, cleanliness, ventilation, &c.; education, amusements, and morals; in short, everything which has a bearing upon the physical or moral well-being of the laboring-classes. We shall regard man as a compound being, consisting of an animal, moral, and intellectual nature, each of which is adapted and adjusted to the other in such a manner as to produce, under proper discipline and training, a harmonious result. As an animal, we shall treat of him as consisting of bones, muscles, bloodvessels and nerves—organs of nutrition, secretion, respiration, and intellect. We shall assume it as granted, that the perfect development of his physical organization requires that he should originate from healthy parents; that he should have a due supply of proper aliment; pure air and water, light and warmth, and that he should exercise his organs within normal limits. The question what is the proper food of man, must be determined by experience, observation, and extensive induction; a few isolated cases, and those perhaps of invalids, not being sufficient to lead us to a safe conclusion. We may as well remark here, that we believe no general rules can be laid down applicable to all, or which will apply to the inhabitants of different climates. Those, for example, who live in the colder regions of the north, require chiefly strong animal food, in large quantities, for the maintenance of the usual degree of animal heat; in temperate latitudes, a mixture of animal and vegetable food is demanded, and is found most conducive to health; while in tropical countries an almost exclusively vegetable diet is not only most agreeable, but is by far the most salutary. When we say that pure air is essential to health, we mean, that it should contain not only the usual proportions of oxygen and nitrogen, but that it should be free from those adventitious mixtures foreign to it; such as marsh-miasmata, deleterious gases, floating particles of matter given off by various materials, while undergoing the manipulations of the artificer. The same remark may be applied to water. This is generally unwholesome in proportion to the quantity of foreign matter contained in it, whether animal, vegetable, or mineral; hence the insalubrity of such as is obtained from wells in large cities, or from stagnant pools and marshes.* That man requires for the full development of his physical powers the influence of light and heat, is too well known and too generally admitted to need remark. We see it exemplified in the diminutive stature of the Greenlander and the dwellers beneath the pole; in the pale, weak, and emaciated condition of those shut up for a long time in bastiles and prisons. We shall assume also that the full and complete development of our physical capacities requires that our organs should be exercised. We may enjoy all the above conditions, and yet from inactivity our bodies may possess neither beauty, health, nor vigor. The violation of such a fundamental law as exercise, we shall find, always carries its punishment along with it; and however it may have been in the primeval state of man, yet now we cannot but see and admire the wisdom and the goodness of that divine injunction, "in the sweat of thy brow shalt thou eat bread." We shall not only assume these things to be proved, but we shall consider it established that the moral and intellectual faculties have material organs assigned them in the brain, which serve to them as instruments by which they work out their grand results. We believe that a sufficiently extensive induction of facts has proved that the anterior portion of the cerebral mass is assigned to the intellectual and rational faculties; the superior portion, to the moral sentiments; and the posterior and inferior portion, to the animal propensities, common to man and the brute. In order to health and the possession of what is called a well-balanced mind, we hold, with the phrenologist, that these must all act in harmony; that the preponderance has been given to the moral and intellectual faculties, in order to control our inferior appetites, to chose between right and wrong, and guide our steps through the dangers which surround us. Metaphysicians have spent much unnecessary labor in attempting to prove the freedom of the will and the liberty of choice; but our own consciousness settles this question far more conclusively and satisfactorily than all the reasonings and speculations of a Locke, a Reid, or an Edwards. We feel and know that we are free agents, that our faculties are all good, created for our enjoyment, and that it is only through their abuse that they become instruments of evil and of suffering. We feel, that the exercise of these various faculties, in obedience to the organic and physical laws of our nature, which harmonize with the precepts of Christianity, confer moral and intellectual pleasure, and are no less conscious that they are strengthened and invigorated by such exercise; that in order to health and happiness, they must act harmoniously, each in its proper sphere, all in their proper season.

With these grand landmarks or principles as our starting point, we shall, in the next number, enter more immediately upon the subject before us.

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* It has lately been proved that much of the Albany beer has been manufactured from such water for years past. This accounts in part for its extremely unhealthy qualities.—*See Report of Beer Trial, J. Taylor* vs. *E. C. Delavan*, verdict in favor of the latter.

SOCIAL CONDITION OF THE CANADA INDIANS.

We copy the following remarks relative to the social condition of the Indian tribes inhabiting the Canadas, from Murray's History of British America:—

"The fundamental principle of their polity is the complete independence of every individual, his right to do whatever he pleases, be it good or bad, nay, even though criminal and destructive. When any one announces an intention which is disagreeable to his neighbors, they dare not attempt to check him by reproach or coercion; these would only rivet his determination more strongly. Their only resource is to sooth him, like a spoiled child, by kind words, and especially by gifts. If, notwithstanding, he proceeds to wound or murder any one, the public look on without concern, though revenge is eagerly sought by the kindred of the injured person.

"Notwithstanding this impunity, which, on our side of the Atlantic, would be followed by the most dreadful consequences, it is somewhat mortifying to the pride of European civilization to learn, that there reigns a degree of tranquillity greater than the strictest police can preserve with us. The Indians are divided into a number of little nations or tribes, fiercely hostile to each other, but whose members are bound among themselves by the strictest union. The honor and welfare of the clan supply their ruling principle, and are cherished with an ardor not surpassed in the most brilliant eras of Greek and Roman patriotism. This national attachment forms a social tie, linking the members to each other, and rendering exceedingly rare, not only deeds of violence, but even personal quarrels, and banishing entirely that coarse and abusive language which is so prevalent among the vulgar in more enlightened communities. This feeling, added to the sentiment of dignity and self-command considered suitable to the character of a warrior, renders their deportment exceedingly pleasing. They are completely free from that false shame which is termed *mauvaise honte*. When seated at table with Europeans of the highest rank, they retain the most thorough self-possession; and, at the same time, by carefully observing the proceedings of the other guests, they avoid all awkwardness in their manners. Their generosity, too, in relieving each other's necessities, scarcely knows any bounds, and only stops short of an absolute community of goods. No member of a tribe can be in the least danger of starving if the rest have wherewith to supply him. Children rendered orphans by the casualties to which savage life is subject, are immediately taken in charge by the nearest relative, and supplied with everything needful as abundantly as if they were his own. Nothing gives them a more unfavorable opinion of the French and English than to see one portion revelling in abundance, while the other suffers the extremities of want; but when they are told that, for want of these accommodations, men are seized by their fellow-creatures and immured in dungeons, such a degree of barbarism appears to them almost incredible. Whole tribes, when obliged by the vicissitudes of war to seek refuge among their neighbors, are received with unbounded hospitality; habitations and lands are assigned to them, and they are treated by their new friends in every respect as a part of themselves. It may, however, be observed, that as such an accession of numbers augments the military strength of the tribe, there may be a mixture of policy in this cordial reception.

"In consequence of this spirit of order and internal union, the unbounded personal freedom which marks their social condition seldom breaks out into such crimes as would disturb the public peace. Its greatest evil, of which we shall see repeated instances, is, that individuals, actuated by revenge or a spirit of daring enterprise, think themselves justified in surprising and murdering a hated adversary. From this cause every treaty between the tribes is rendered precarious; though, as each is aware of these lawless propensities, room is left for mutual explanation, so that particular outrages may not involve a general war. This circumstance leads us to notice, that the favorable aspect presented by the interior of these communities, can by no means warrant any conclusion as to the superiority of savage life when compared with that of civilized man. On the contrary, the most perfect form of government devised by the human being in the state of nature, has never been exempted from those feelings of relentless enmity and continual fear with which bordering nations regard each other. These, as will appear in the sequel, often impel them to the most direful crimes; but at present we shall proceed with our survey of their domestic usages.

"Some writers have denied that there exists among the Indians anything that can properly be termed a matrimonial union. This, however, seems only a prejudice, in consequence of their not being any regular ceremony, as with us. The man, it appears, after having made an arrangement with the parent of his bride, takes her home, and they live in every respect as husband and wife. The mode of courtship among several of the tribes is singular. The wooer, attended often by several comrades, repairs at midnight to his fair one's apartment, and three times twitches her nose. If she be inclined to listen to his suit, she rises; otherwise he must depart. Though this visit be so very unseasonable, it is said to be rarely accompanied with any impropriety; the missionaries, however, did not think it right to sanction such freedom in their converts. The preliminary step is, in this manner, taken with the lady, but the decision still rests with the father, to whom the suiter now applies. Long has given no unpleasing specimen of the address: "Father, I love your daughter: will you give her to me, that the small roots of her heart may entangle with mine, so that the strongest wind that blows may never separate them?" He offers, at the same time, a handsome present, the acceptance of which is considered as sealing the union. Considerable discrepance prevails in the descriptions, and apparently in the practice, as applied to different tribes; yet, on the whole, great reserve and pro-

priety seem to mark this intercourse. The young men of the Five Nations valued themselves highly for their correct conduct toward the other sex. Of numerous female captives who fell into their hand during a long series of wars, though some were possessed of great personal beauty, no one had to complain that her honor was exposed to the slightest danger. The girls themselves are not always quite so exemplary; but their failures are viewed with indulgence, and form no obstacle to marriage. Once united by that tie, however, a strict fidelity is expected and commonly observed. The husband, generally speaking, is not jealous, unless when intoxicated; but when his suspicions are really excited regarding the conduct of his partner, he is very indignant, beats her, bites off her nose, and dismisses her in disgrace. There are occasional instances of a divorce being inflicted without any assigned reason; but such arbitrary proceeding is by no means frequent. As the wife performs the whole labor, and furnishes a great part of the subsistence, she is usually considered too valuable a possession to be rashly parted with. In some cases these domestic drudges become even an object of dispute and competition. A missionary mentions a woman, who, during the absence of her husband, formed a new connexion. Her first partner having returned, without being agitated by any delicate sensibilities, demanded her back. The question was referred to a chief, who could contrive no better scheme than that of placing her at a certain distance from both, and decreeing that he who should first reach her should have her; "thus," says he, "the wife fell to him who had the best legs." With regard to polygamy, the usual liberty is claimed, and by the chiefs in the west and the south it is indulged to a considerable extent; but among the tribes on the lakes the practice is rare and limited. When it does occur, the man very commonly marries his wife's sister, and even her whole family, on the presumption, we may suppose, that the household will be thereby rendered more harmonious. The Indian is said never to betray the slightest symptom of tenderness toward his wife or children. If he meets them on his return from a distant expedition, he proceeds without taking the slightest notice, and seats himself in his cabin as if he had not been a day absent. Yet his exertions for their welfare, and the eagerness with which he avenges their wrongs, testify that his apparent apathy springs only from pride and a fancied sense of decorum. It is equally displayed with regard to his own most urgent wants. Though he may have been without food during several days, and enters a neighbor's house, nothing can make him stoop to ask for a morsel.

The rearing (for it cannot be called the education) of the children is chiefly arranged so that it may cost the parents the least possible trouble in addition to the labor of procuring their subsistence. The father is either engrossed by war and hunting, or resigned to total indolence; while the mother, oppressed by various toils, cannot devote much time to the cares of nurture. The infant, therefore, being fastened with pieces of skin to a board spread with soft moss, is laid on the ground or suspended to the branch of a tree, where it swings as in a cradle, an expedient which is so carefully adopted as scarcely ever to be attended with accident. As soon as the creatures are able to crawl on their hands and feet, they are allowed to move about every part of the house and vicinity, like a cat or dog. Their favorite resort is the border of the river or lake, to which an Indian village is usually adjacent, and where, in summer, they are seen all day long, sporting like fishes. As reason dawns, they enjoy in the most ample degree that independence which is held the birthright of their tribe; for, whatever extravagances they may indulge in, the parents never take any steps to restrain or chastise them. The mother only ventures to give her daughter some delicate reproach, or throws water in her face, which is said to produce a powerful effect. The youths, however, without any express instructions, soon imbibe the spirit of their forefathers. Everything they see, the tales which they hear, inspire them with the ardent desire to become great hunters and warriors. Their first study, their favorite sport, is to bend the bow, to wield the hatchet, and practise all those exercises which are to be their glory in after-life. As manhood approaches, they spontaneously assume that serious character, that studied and stately gravity, of which the example has been set by their elders.

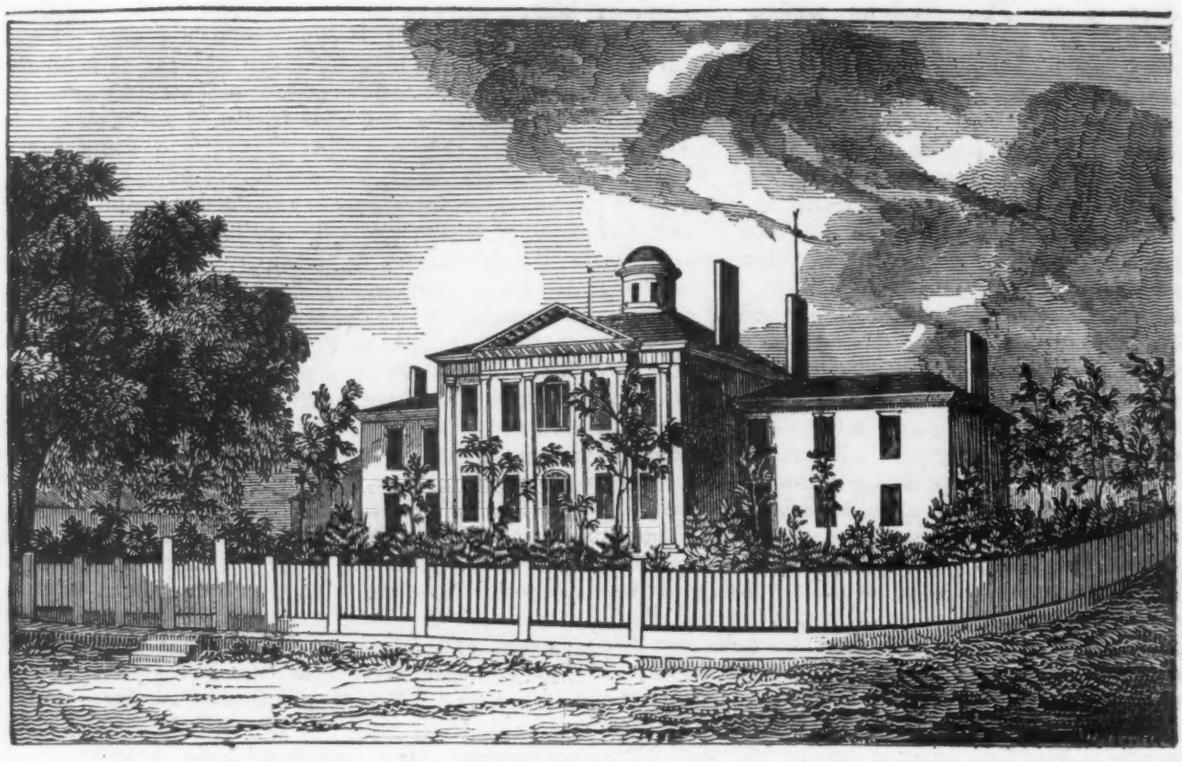
WERE WE NOT HAPPY.

Were we not happy in our summer dreams?
In noontide wanderings over hill and glen,
When flowers were steeped in rich and fragrant dews,
To yield the incense while we worshipped then:
When vernal skies were floating o'er the earth,
And golden beams were lighting up the sea;
Were we not happy in those blissful days?
The brightest pages of our memory.

Were we not happy in the glowing halls,
Where Music woke her deep melodious tone,
Where lustrous eyes in wit and beauty beamed,
And forms of loveliness were seen alone;
When murmured voices breathed the sunny song
Of some far land to bind us in a spell;
Were we not happy in those joyous times,
Ere *Sorrow's* robe around our footsteps fell?

Were we not happy in the sacred fane,
That consecrated ground whereon we trod?
The choral hymns, the penitential prayer
Brought to our hearts the presence of a God;
Where gorgeous windows lent a magic light:
Where crests and bannered trophies round us lay;
Were we not happy in that holy shrine,
Lit with its glimmering lamps and rich array?

Shall we be happy, dearest, when the flowers
Of youth are withered, and the summer skies,
No longer fraught with poetry and life,
Lose their sweet influence in our fading eyes,
Shall we be happy on the bed of death?
With nought to cheer our sinking hearts, or save:
Look up—a richer, surer hope is ours;
We shall be happy far beyond the grave!



Hall of the American Antiquarian Society, Worcester, Massachusetts.

AMERICAN ANTIQUARIAN SOCIETY.

This building is pleasantly situated in the village of Worcester, Massachusetts. The central part was erected in 1819 and '20, and dedicated on the twenty-fourth of August of the latter year. The wings were added in 1831. The whole building is of brick, and is the liberal donation of the late Isaiah Thomas, LL. D. to the society.

The society was organized in 1812, and held its first meeting at the Exchange Coffee-House, in Boston, November the nineteenth, of that year. Its officers are annually elected on the twenty-third of October, that being the day on which Columbus discovered America. The first anniversary meeting of the society was held at Boston, October twenty-third, 1813, when an address was delivered in King's Chapel by the Rev. William Jenks, D. D. There are now two meetings of the society in each year; the first on the twenty-third of October, and the second on the last Wednesday of May.

The objects of the institution are the collection and preservation of American antiquities.

It was the intention of its founder and munificent patron, Mr. Thomas, that its library should embrace as perfect a collection of American literature as possible. No institution had proposed the accomplishment of a similar object, and the general preference given in our libraries to European over American books, had prevented in a great measure the collection of them, only to a very limited extent. It seemed very desirable that a remedy for an evil of this description should be provided. So little care had been taken for the preservation of the productions of our early American authors, that many of them were found with extreme difficulty, while others were irrecoverably lost. By the establishment of an institution of this character, a convenient receptacle would be provided for the early as well as modern literature of the country, and when its objects should be generally known, individuals possessing books, pamphlets, maps, or manuscripts, might have a convenient place to deposite them, where they might be useful to the public.

Interesting materials of the history of the country are profusely scattered in every town, which have never yet found a place in any of our public libraries. It is among the principal objects of this institution to collect and preserve these, as well as all the productions of American authors.

Beside providing the society with a spacious building for the accommodation of its library and cabinet, Mr. Thomas also gave it between four and five thousand volumes of books, among which are many valuable works illustrating the history of the country, as well as many rare and interesting specimens of early printing. He also provided the society with a fund for the permanent support of a librarian, and otherwise richly endowed the institution with the means of making annual purchases of books and for meeting incidental expenses.

Visiters can have easy access to the library of the society, and it is always open to such as have occasion to use the books. As it is not local in its objects, but general or national, and from the means it possesses of making itself useful to the public, it must, eventually, rank among the largest as well as the most interesting public libraries of the country.

INSTITUTION FOR THE DEAF AND DUMB IN PHILADELPHIA.

This institution was established in 1820, and the building erected in 1824. It is constructed of granite; the front is ninety-six feet, and the width is sixty-three feet. The legislature of Pennsylvania granted eight thousand dollars to the funds of the institution, and to which were added donations from some liberal individuals. The state made provision also for the maintenance of fifty indigent pupils, for several years. Maryland and New Jersey gave support to the institution; the former by an appropriation of thirty-five hundred dollars for a number of years, to support indigent deaf and dumb children of that state; and the latter, by maintaining twelve pupils, for an indefinite period. The children are taught industrious habits, and their minds so cultivated by their skilful teachers, that they acquire much useful information. The pupils continue in the asylum from four to six years. The system pursued in the institution is agreeable to the theory of the Abbe Sicard; and substantially conformable to that adopted in the American asylum at Hartford.

HINTS TO STUDENTS ON THE USE OF THE EYES.

BY EDWARD REYNOLDS, M. D.

The eye is a little world of wonders, whether we consider its structure, or its movements, or the noble offices it performs. In the beautiful language of the Savior, it is "the light of the body." It watches over its members, it directs its movements, it warns it of danger. But it has higher offices. It is the messenger of the mind, sent forth to collect the materials of thought. In the words of the essay before us, "Its importance rises in value when it is considered as the channel of most of the knowledge of nature, and through her, of the majesty, wisdom, and goodness of God." But it is also the interpreter of the soul, and expresses its inmost feelings, its most delicate shades of emotion, with a faithfulness and power, which the pen and tongue can never rival, although they boast of "words that burn."

And yet this noble organ, which gives to the mind most of its knowledge of the world below, and furnishes the most beautiful imagery to shadow forth the glory of that which is above, is wretchedly neglected, and often shamefully abused. Great pains are taken to educate the limbs to move with grace and effect; the tongue is trained with great care to articulate every letter, and combination of letters; but the eye is left to educate itself; and if it selects the most important and beautiful objects, or examines them in the best manner, or is used with skill and prudence, it is the result of accident, and not of instruction or training.

But our immediate concern is with the question, how instruments of such value and delicacy shall be used, so as to secure them from disease and premature decay. We consider the student and the clergyman not a little indebted to the editor of the "Biblical Repertory," and his able correspondent, for presenting in this form a set of maxims and precepts which, if observed, would

save many an hour of suffering and idleness; and we are anxious to bring them to the notice of parents and teachers.

We must reluctantly pass over, without remark, the beautiful introduction of Dr. Reynolds, in order to preserve all our space for the practical portion of his essay, with a single reference to his observation, on the tenfold value which the art of printing has conferred on the eye. The mental treasures of ages are thus brought within its reach; it can discern, through these characters, not only the aspect of different countries, but the events of past ages, and discover the hidden wonders of the unseen world in the pages of inspiration.

In commencing his remarks on the management of the eyes, Dr. R. observes, that this is emphatically "*the reading age*," and states this fact in terms which may suggest other ideas than those which relate to vision.

"Reading is the fashion of the day. It commences with the child in the nursery; constitutes the chief business of boyhood and youth; and continues through manhood and old age. No period is considered too tender for this all-important business of education to be commenced. No threatening evils are of sufficient moment to stand in its way; no acquirements sufficiently great to permit repose. As one advances in his course new demands for exertion present themselves; new temptations multiply; new sources of information are thrown open to him. His eyes begin to manifest the alarming signs of inordinate use; but they are too often disregarded, until incurable disease numbers him among its victims;—and he learns, when too late, that he has closed the widest door of knowledge to the soul, and is left to mourn, with many a kindred spirit, the premature sacrifice of his usefulness and power."

In connexion with this, Dr. R. informs us that the present age is marked by "an unusual prevalence of diseases of the eye," and that, among the ablest and most valuable of our clergy and public officers, and literary men. He maintains, however, that this is by no means a necessary consequence of a studious life; and appeals to the history of students who have used their eyes to an extent scarcely credible, and yet preserved their vision unimpaired, to advanced old age. He describes the wonderful provision which the Creator has made for the safety of these precious organs; and assures us that the source of their diseases is to be found, not in their use, but in their abuse—in the ignorance which knows not, or the negligence which regards not, the laws by which the most exquisite of optical instruments should be regulated. His first object, therefore, is to give the student (for whose benefit he principally writes) some correct ideas of the degree and proper adjustment of the light by which he studies.

The first circumstance he mentions, as "one of the most prolific causes of weakness of sight—which has caused the destruction of many eyes," is little suspected, because the injury is generally gradual—"*the exposure of the eyes to frequent alteration of weak and strong light.*" The immediate sensation of pain, when a strong light is brought into a dark room, should be a sufficient warning. The ultimate effects are like those of sudden changes from heat to cold upon the body; and when the light has been long excluded, the tyrant Dionysius, the Carthagenians in their punishment of Regulus, and even the liberators of long-immured prisoners, have found the sudden transition to the brilliancy of day, sufficient to produce total blindness.

In most parts of the earth, the general course of nature is adapted to the structure of the eye; and the brilliant sun is ushered in by a gradually increasing twilight. But we neglect or counteract this indication of nature. Many exclude all light from the sleeping-room, until it is ready to burst upon them in its strength. The darkest room is often selected for the study, and the evening lights are not introduced, until total darkness has rendered the eyes peculiarly susceptible. In illustration of the danger of these practices, Dr. R. mentions the case of a lawyer who brought on a serious disease by performing his studies and labours in a gloomy room and passing into one of brilliant light to take his meals. But a more serious warning is found in the case of a young traveller, who was awakened in the morning by the rays of the sun shining in upon him; and on exposing himself a second day in the same chamber, was seized with a violent opthalmia, which produced a course of weakness and suffering for years.

The first and most obvious rule which Dr. R. draws from these facts is, that we should not expose the eyes suddenly to a strong light upon awaking from sleep. To avoid this, he would advise a western room for sleeping; and where that cannot be obtained, he directs us to produce the same effects by curtains or blinds, which will soften the light so as to render it agreeable to the eyes.

The succeeding rules are not less obvious inferences from those facts—that the room selected for the study, should be *well lighted*, both in the day and evening, and the eyes should not be unfitted for their evening task by the popular mode of resting them for an hour or more in darkness. Of this last habit, he observes, there can be no more "certain mode of inducing the evil from sudden changes of light." The light should always be regulated according to the powers of the eye; and it is equally important that the amount and distribution of it should be such as to produce no unpleasant sensations.

Reflected or concentrated light is highly injurious. Two cases of actual blindness have occurred within the knowledge of Dr. R. in a few years, from exposure to concentrated light; and weakness of sight that has unfitted the individual for usefulness through life has often been the consequence of it. The rays of the sun he considers peculiarly injurious, when reflected from an opposite wall, or even when they enter through a window descending to the floor, and are thence reflected to the eyes. Any exposure of this kind should be obviated by curtains of some soft color, and the furniture should be such as the eye may repose upon with agreeable sensations. Nature

is clothed with drapery whose color in refreshing to the eye; and it is false taste as well as false philosophy, which attempts to dazzle, in order to please it.

Fatal mistakes, Dr. R. remarks, are often made, and we may add, no less fatal economy is often practised, in regard to *the quantity of light suitable for evening study.* Many think they are performing an important service to the eyes, by accustoming them to little light, when, in this view, nothing can be more injurious. "The irregular, flickering lights of common lamps and candles," he regards "as the worst possible means of lighting the study." Candles, if used at all, should be of wax or spermaceti; but he prefers the common Argand study-lamp (the lamp with a circular wick, which still bears the name of the inventor), furnished with a shade of oiled paper, which diffuses sufficient light without any offensive glare, and is free from the objections of concentrated light, produced by the dark shade, or the less objectionable one of ground glass.

In connexion with this part of the subject, Dr. R. notices several habits of studious men which are injurious. *Shades over the eyes* he considers injurious to all, except those individuals whose eyes are prominent, and stand out far from the head, and whose eye-brows and eye-lashes are weak and insufficient. Such as are deprived of nature's shades, require some substitute; but this should be of thin, green silk, which will soften, but not exclude the rays of light.

The habit of saving time by reading and writing by twilight or moonlight he protests against as miserable economy, which has prematurely ruined the eyes of hundreds and thousands, and robbed religion and learning of many an able friend.

He also cautions us against gazing at the moon for a long time, as a dangerous habit, or watching the flashes of lightning. The pupil, dilated by surrounding darkness, permits this highly-concentrated light to pass to the eyes in too great quantities; and the history of astronomy points to a number of its votaries who were blinded by this habit.

Reading or writing by a side-light, is a practice by which many have ignorantly or thoughtlessly impaired their vision. At first view, this would seem, too trivial a circumstance to produce the least effect; and yet, it only requires a glimpse at the structure and physiology of the eye, which Dr. R. gives us, to see that it is of material importance. The iris, or colored portion of the eye, which gives it its beauty, serves also as a curtain to protect it, and instinctively opens, when the light is diminished, and contracts when it is increased. This transition, which is easily observed by looking at the eyes in a glass after they have been kept in darkness for a few moments, renders the sudden change of light injurious, and also makes it important, that *both eyes should be exposed to an equal degree of light.* The sympathy between the eyes, Dr. R. informs us, is so great, that if the pupil of one is dilated by being kept in the shade, as must of course be the case where the light is on one side, the eye which is exposed cannot contract itself sufficiently for protection, and the exposed eye is almost inevitably injured.

On the same general principles, the habit of sitting in front of a window, with the back toward it, and holding the book or paper before the eyes, or of holding a candle between the eyes and the book, for the purpose of seeing more distinctly, is very injurious. Those, however, whose eyes fail from age, are in danger of falling into this habit; and to such, Dr. R. advises an immediate recourse to spectacles.

In reply to the question, "what is the direction best suited to the eyes?" Dr. R. replies—"*It is that light which is sufficient for distinct vision, and which falls of the left shoulder in an oblique direction, from above, upon the book or study table.*"

The last direction which is given on this point is, that the eyes should be protected in summer, from the direct rays of the burning sun, by making the rim of the hat of sufficient width. "Eye destroyers," he observes, "would not be an inappropriate name for the narrow things, which, by some fashions, are called hats."

Such is an imperfect and partial sketch of an essay of peculiar interest and value.

MELANCHOLY MUSINGS.—By Hon. Mrs. Norton.

Ah! who e'er dreamed, when on Life's flowers,
All fresh and fragrant, lightly pressed
The velvet footfall of the Hours,
And Joy and Hope each vision blessed,
That sorrows, such as press me now,
Would shroud the darkened heart and brow?

Though Friendship, when our sky is light,
In beauty o'er our pathway bends,
As clouds gleam beautiful and bright
When tinged with sunshine—faithless friends,
E'en like the summer clouds, are gone
When darkness and the storm come on.

And Love—that incense so divine
Of the fond breast in guileless youth—
Flames oft at some unworthy shrine;
And they who trust to plighted truth
Lean on a reed that soon may part,
And send its shivers through the heart.

And Fame, for which we spend our breath,
Is but a meteor of the mind,
That lures us on to toil and death;
And her successful votaries find
Hate's poisoned flowers amid the chain
Of roses wreathed around the brain.

For Envy's eye, and Slander's tongue,
Must lay the aspiring spirit low,
Although the innocent and young
Be more than orphaned by the blow,
And, for a mother's honored name,
Be left a heritage of shame.

Joy's fount has long since been dried up;
My soul, by care and sorrow riven,
Turns, as I drain Life's bitter cup,
From heartless man to righteous heaven;
And oh! I long on Earth's soft breast
To lay my weary head, and rest.

Fig, 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

ANCIENT COINS.

Under this head, in the seventh volume, we introduced several illustrations of very ancient coins chiefly Assyrian. We are now enabled to give a few others, though of more modern date.

Figures 1 and 2 upon the opposite page, represent two Tyrian coins of different metals, weight, and antiquity, each bearing an impression of the god Melkart, the Hercules of the Phenicians. The smaller coin exhibits the state of art in this particular, among the colonies of ancient Tyre, or probably of Tyre itself. It was found in the island of Cossyra (now called Pantellaria) which belonged to the Tyrians. It is made of copper, and is about the size of a ten-cent piece. Our engraving is a magnified representation of it.

Figure 1 represents a silver coin of Tyre (twice the size of the original) weighing 214¾ grains, and displays a striking representation of the head of Melkart. This coin exhibits a more perfect state of the art; and its date is supposed to be about 84 B. C. Its whole appearance gives evidence of Roman workmanship. Nearly all of the Phenician coins had, upon one side, a representation of either Melkart or Astarte, idols symbolical of the sun and moon—the Baal and the "Queen of Heaven" of Scripture.

Fig. 3 represents the obverse and reverse of a Roman brass coin called *as*, which was in extensive circulation, especially in the eastern provinces of the Roman empire, about the time of Augustus Cesar and his immediate successors. Its weight varied during different reigns and was regulated by the value of a *denarius;* the latter containing ten *asses*, and the *as* four *quadrans*, the smallest of the Roman coins. The weight of the *as* (now in the British Museum) represented in the cut, is 4,000 grains, and its nominal value, when in circulation, was about eighteen *mills* of our money. The *as* originally weighed a Roman pound of *brass*, but its weight gradually diminished until at last it weighed only about two ounces. As a pound it was divided into twelve ounces, and the coin representing the ounce and others below it diminished in size, in reference to value, relative to the *as*. All the brass coins below the *as* were marked with pellets or globules, to denote the number of ounces which they contained. Then the *uncia* or ounce bore similar globules to denote the number of quadrans it contained; and the *quadran* had representatives upon it to denote its value. Thus the value of the circulating medium was easily made known to the people.

The *as* usually bore, except in the earlier times of Rome, a head of the two-faced Janus on one side, and on the other, the prow of a ship. Such is the case with the one represented in the engraving.

Fig. 4 represents a Grecian *didrachma*, equal in value to two *denarii* or twenty-eight cents, and half the value of the Hebrew *shekel*. The *didrachma* was the usual tribute paid into the temple by the Jews; but as it was not lawful to deposite coins of the heathen into the sacred treasury, they were exchanged for Hebrew money, and hence we perceive a reason why brokers or "money-changers" were allowed to do business within the temple. After the destruction of Jerusalem, the Jews were obliged to pay the *didrachma* tribute into the capitol at Rome, in the same manner as they had previously done into the temple.

Figs. 5 and 6 represent Macedonian coins, or coins in use at Philippi under the emperors. Philippi was so named after Philip, father of Alexander, who rebuilt it and made it a frontier town of his kingdom, bordering on Thrace. This region was called *Macedonia prima*, or first part of Macedonia, and such is the import of the inscription upon one side of the larger coin. The smaller one has the name of Philippi inscribed upon it. We are unable to determine the value of these coins.

Fig. 7 shows the size and form of the *quadran* with the globules upon it, and in addition, an open hand. The latter was a frequent symbol upon Roman coins, and also upon their standards. Sometimes the *quadran* had an open hand with a strigil on both sides; sometimes the obverse bore a star, grains of corn, a dolphin, heads of Hercules, Ceres, &c.

Fig. 8.

Fig. 8 represents a Roman silver coin called denarius, which was originally equivalent to ten *asses*, but varied in value at different times. Under the consular government this coin was the seventh part of an ounce and just equal to the *drachma*. Those struck under the emperors and called imperial were the eighth of an ounce, and equal in value to about fourteen cents of our money. This coin was the usual price of a day's labor in Judea, and is the "penny" of Scripture.

The consular *denarius* bore on one side a head of Rome, and X or a star, with a chariot and

horses. Afterward the bust of different deities were given, and finally, under the emperors the heads of the Cesars appeared. Our engraving represents a *denarius* of Tiberias.

POLITICAL ECONOMY.—No. V.

BY M. WILSON, ESQ.

MONOPOLIES.

The establishment of the principle, that freedom of labor and capital is necessary to ensure the creation of the greatest amount of productiveness, has a direct bearing upon the policy of *monopolies*. A monopoly grants to an individual, or to a company, an exclusive right to employ its labor, or capital, in some particular manner; and to receive all the benefits arising therefrom; and consequently deprives the great mass of the community of the enjoyment of those common privileges to which all are equally entitled. Monopolies, to a greater or less extent, and under different forms, have been found in all the countries of Europe; and they appear, at one time, to have become a part of a permanent system of favoritism, the adoption of which the wealthy and influential were enabled to obtain from government, by the representation that the public interests, and the protection of different branches of trade, demanded it. Such was the exclusive right granted to the British East India Company to import into Great Britain, or her territories, the productions of all countries east of the Cape of Good Hope. Such a regulation confers upon a small number of individuals, as an exclusive right, that which belongs to the whole community; and is a direct injury to those from whom the right is taken; as is a restriction upon the employment of their labor and capital, and prevents them from engaging in business which might be profitable to them. The effect of the monopoly is, also, in another manner, injurious to the community at large. For, those who hold this exclusive privilege, being liable to no competition, may charge for their commodities whatever they choose; and thus, the price, which the consumer is obliged to pay, is enhanced at the mere will of the monopolist. And as it is the interest of the monopolist to charge dear for his commodities, and there being nothing to restrain him, there can scarcely be imagined any limit to the oppression which he may exercise.

Similar in effect were those restrictions upon industry, under the name of "apprenticeships," formerly, if not now, existing in many of the countries of Europe. By these regulations artisans were prohibited the exercise of more than one trade, and they were not allowed to practise that unless they had served a prescribed apprenticeship. It was not sufficient for a man to have the necessary qualifications for a particular employment, but he must, besides, have served his time, or have been admitted to the freedom of the craft; the members of which were generally bound by some odious restrictions, as, for instance, to sell at particular prices, and never to employ beyond a certain number of apprentices. The effect, of such a system, upon skill and industry, depriving them, as it did, of a free market and keeping a large amount of them out of employment, was to reduce their value, and place the laborer in the power of those whose interest it was to reduce the supply as much as possible, in order to secure to themselves the most exorbitant profit. The principal argument urged in favor of these restrictions, was the ensurance of a more perfect execution of the products of industry, and, that the foreign demand, occasioned by their superiority, would be highly favorable to the national commerce. Were such, indeed, the admitted effects of the system, the *justice* of the restrictions might still admit of doubt. But, in opposition to the system, it is contended that such regulations are illusory in practice; for experience has shown that self-interest is the best of all instruction. In Spain, where the apprenticeship system has been carried to a great extent, the products are far from being as perfect as those of Britain, where the manufacturing interests are less shackled by these restrictions; and, in the latter country, the most thriving towns, such as Manchester, Birmingham, and Liverpool, are those in which no incorporations of crafts and trades have ever existed. It was stated by a writer, of acknowledged information, who wrote in 1754, that houses within the precincts of London could hardly find tenants, and numbers of them remained empty; while Westminster, Southwark, and the other suburbs, were continually increasing. These suburbs were free; while London supported within itself four-scores and twelve companies, the members of which annually adorned, with a silly pageantry, the tumultuous procession of the Lord Mayor.

After the discovery of America, those of the European nations, that had colonies there, greatly extended the system of monopoly; and sought to appropriate, as far as possible, to their own exclusive benefit, the entire trade of their respective colonies. In some cases, the settlements were placed under the government of an exclusive company, which had the sole right, both, of purchasing from the colonies, and of supplying them with European goods; thus, not only placing it in the power of the company, both in their purchases and sales, to oppress the colonists, but offering the greatest temptations to do so.

Some of the European governments, however, left the trade of their colonies free to their own subjects, but excluded the colonists from trading with other nations. Even Great Britain, probably the most liberal in her commercial policy toward her colonies, imposed upon them some restrictions that, to our liberal notions, savor strongly of tyranny. Her policy was, at that day, considered very liberal, when she confined to the market of the northern country only a certain portion of the commodities of her colonies, and permitted the remainder to be exported directly to other countries, provided it were done in British, or in plantation ships, of which, the owners, and three fourths of the mariners, were British subjects. Although she encouraged the manufacture of pig and bar iron, yet she imposed an absolute prohibition upon the erection of steel furnaces in any of her American plantations, and obliged the colonists to purchase of British merchants and manufacturers such articles, manufactured of steel, as they had occasion for. The exportation, by water, from one province to another, and also the carriage, by land, of woollen goods of American production, were prohibited. Such a regulation was, of course, a severe restriction upon the employment of industry, and effectually prevented the establishment of any extensive woollen manufactories. The industry of the colonists was thus confined mostly to the manufacture of such commodities as were required for consumption in their own respective provinces, and the intercourse between the different colonies was, to a considerable extent, restricted.

Similar restrictions upon industry were common in the countries of Europe at the period abovementioned, but their injustice appears to have excited little attention, and their legitimate effects to have been little understood previous to the writings of Adam Smith; and even this writer appears disposed rather to palliate, than to censure, what was then considered the comparatively very liberal commercial policy of Great Britain. Arbitrary commercial regulations were made expedients of police, and likewise served, by the dispensation of honorary or pecuniary advantages, to increase the authority of government. And whenever wealth and talent are enlisted in favor of any system, however odious, and however much opposed to the interests of the great mass of the community, there will never be wanting plausible reasons for the continuance of restrictions on personal liberty. Even at the commencement of the nineteenth century, Mr. Say remarks that there was, at that time, probably no country in Europe where a man was free to dispose of his industry and capital in what manner he pleased; in most cases he could not even change his occupation, or place of residence, at pleasure.

There are, however, some cases in which government may, with propriety, regulate the exercise of any employment of industry, which, without regulation, might be prejudicial to the rest of the community. In France, apothecaries are obliged to serve an apprenticeship, and are subject to an examination into their knowledge of drugs and medicines, before they are permitted to deal in these articles. And the same with surgeons and physicians in most countries. Where the health and lives of the citizens depend upon the knowledge and skill of the members of any profession, it seems just that the community should require of them some guarantee of their professional ability; but it does not appear either just, or desirable, to limit the number of practitioners, or to prescribe the plan of their education. Monopolies are sometimes created for the purpose of building bridges, and railroads, constructing ferries, and digging canals, &c., where they are objects of public interest; and it is thought that such monopolies are often very beneficial. For they are, many of them, works that would never be undertaken by individuals, unless government, by preventing competition of others, should secure to the proprietors of such works a more exclusive right in them than they would otherwise possess. In the case of a patent, or copyright, which perhaps might be regarded as a species of monopoly, no right is taken from the community; and the law interposes merely to guaranty to a man the avails of his own industry.

The subject of BANKING has become of such absorbing interest at the present day, and banks so often decried as monopolies, that, considered in this light, they would appear to claim some attention in the present article, nor could they justly be passed by without notice. A few words however on this point will suffice. The subject appears to present itself in some one of the following aspects, and, in whichever the facts of the case will place it, the conclusion at which we must arrive, relative to the justice of these institutions, appears not to be a difficult one. The only question that merits discussion is with regard to their legitimate effects and tendencies, and not with respect to their being monopolies.

If banking be a monopoly, by which favor is shown to one party, and for which another must pay; then, either the system itself is wrong, or its regulation is so controlled, that a thing, good in itself, has been converted into an engine of evil.

If, under the present system, it deprives no man of any right or interest to which he is justly entitled, although it should be found, to those engaged in it, more profitable than other kinds of business, this might perhaps show want of policy in the dispensing power but, certainly, not injustice.

If banks *must exist;* if they be found essential to the commercial prosperity of an enterprising people; and if their proper regulation and control require that the banking privilege be conferred by, and be under the supervision of the legislature; then, although monopolies, they, like other institutions of public interest, must be supported for the public welfare. If, however, without detriment to the public interests, the privilege can be thrown open to all, by a *general* banking law which shall exclude the possibility of partiality or favoritism, justice requires that it should be done. For, if any benefits result from institutions to which the very organization of society itself gives rise, these benefits are the property of the society, and should not be allowed to be monopolized by individuals. To contend, however, that banks should be destroyed *because* they are monopolies, would be as senseless as to contend that, for the same reason, the profession of medicine, or of law, should be thrown open to the practice of all, without requiring of the practitioners any previous study or preparation. For, certainly, the profession of the law is a monopoly, as it is thrown open to those only who have served the prescribed apprenticeship, and passed the required examination. And thus it should be with banking if the public interests will admit it: it should be thrown open to all who will give the requisite security that the confidence placed in them shall not be abused.

It would not be a difficult matter, however, to prove that it is contrary to justice, and an invasion of *individual rights*, for the legislature to grant monopolies, where the exclusive object is to promote the interests of one person, or of a company of individuals.

With this paper we close our illustrations of the prophets as portrayed by Angelo, and introduce in connexion with the portrait a view of the tomb of Zechariah in the valley of Jehoshaphat.

Zechariah.

Zechariah was one of that body of captives who returned from Babylon with Zerubbabel, about five hundred and twenty years before our era. It is not known to what tribe he belonged, or

Zechariah.—From the Frescoes by Michael Angelo in the Sistine Chapel.

Tomb of Zechariah in the Valley of Jehoshaphat.

whether he was of royal or sacerdotal descent He was contemporary with the prophet Haggai, and the object of his prophecies seems to have been the same as that of the other prophet, to stimulate the returned captives to a renewal of their ancient religious ceremonies, to rebuild the temple and again establish their temporal and spiritual kingdom.

Although Zechariah is one of the most obscure of all the prophetic writers, yet so nearly did the Jews conceive that his style approached to that of Jeremiah, that it was their belief that the spirit of the latter had passed into the former. Bishop Lowth characterizes his style as generally prosaic; "but," says he, "toward the conclusion of the prophecy there are some poetical passages and those highly ornamented; they are also perspicuous, considering that they are the productions of the most obscure of all the prophets."

It is not positively known where Zechariah died and was buried, or to what age he attained. Traditions state that he was buried near Jerusalem; and with this concurs the existing belief which finds, in a remarkable monument in the valley of Jehoshaphat, the tomb of Zechariah, as represented in our engraving of the "Valley of Jehoshaphat, with ancient tombs," &c.

The tomb surmounted by a pyramid, on the left of the engraving is the one which tradition assigns to Zechariah. It is thus described by Buckingham: "It is a square mass of rock hewn down into form, and isolated from the quarry out of which it is cut, by a passage of twelve or fifteen feet wide on three of its sides; the fourth, or western side being open toward the valley and to Mount Moriah, the foot of which is only a few yards distant. This square mass is eight paces in length on each side, and about twenty feet high in front, and ten feet high at the back, the hill on which it stands having a steep ascent. It has four semi-columns cut out of the same rock on each of its faces, with a pilaster at each angle, all of a bastard Ionic order, and ornamented in bad taste. The architrave, the full moulding, and the deep overhanging cornice which finishes the square, are all perfectly after the Egyptian manner; and the whole is surmounted by a pyramid, the sloping sides of which rise from the very edges of the square below, and terminate in a finished point. The square of this monument is one solid mass of rock, as well of its semi-columns on each face; but the surmounting pyramid appears to be of masonry: its sides however are perfectly smooth, like the coated pyramids of Saccara and Dashour, and not graduated by stages like the pyramids of Gijeh in Egypt. There is no appearance of an entrance to any part of it; so that it seems, if a tomb, to have been as firmly closed as the Egyptian pyramids themselves; perhaps from the

same respect for the individuality of the repose of the dead."

THE following beautiful lines were written by a poetical correspondent of the New Orleans Picayune. The occasion which elicited them was the death, by drowning, of a little son of Mr. Ludlow, the manager of the St. Louis theatre. He is described as "a flaxen, curly-headed little cherub, endeared by personal beauty and sweetness of temper to all who knew him." While making a passage from St. Louis to New Orleans with his parents, he was suddenly summoned to the land of spirits. He was sitting upon the guard-rail, laughing joyously, when he fell backward and was never seen again.

A dash, a little plunge one might not hear,
And on the boat went speeding through the wave;
One only saw, and heard, and was so near
As to have followed with an arm to save,
But he stood mute, palsied with sudden fright,
As the boy plunged for ever from his sight.

One at the stern looked at the billows' play,
Abstracted, when a little arm and hand
Arose and grasped at air above the spray,
And sunk again, helpless, to clutch the sand.
The dreamer rubbed his eyes, and looked again,
And when too late, truth flashed upon his brain.

And now a scene of strange alarm began;
A shout was heard—a bell—and the boat stopped;
Here, there, on every side inquirers ran,
And from the stern the heavy yawl was dropped.
Then from the cabin came the accents wild
Of a fond mother screaming for her child!

Like a wild steed coursing its native plain,
On swept the headlong current of the river;
Miles, miles perhaps, the little form was ta'en,
And vain all human effort to deliver.
A fruitless search ending in pale dismay;
And went the boat again upon her way.

Heart-heaving sighs, and heavy sobs were heard,
And maiden's misery, and children's cries,
And friendly voices had no soothing word
With which to dry the mourner's weeping eyes.
Mothers and brothers, sisters, all were there,
Gazing upon the wave in mute despair!

Along that river's distant winding ways,
As the swift boat sped on her journey far,
A maid with lingering, abstract gaze,
Looked on the wave like seer upon a star;
And each glad wave that caught a sister's tear,
Glanced brightly on toward the lost one's bier.

Ah, gems are yet in ocean waves concealed,
Bright as the silver lanterns of the sky,
Brighter than ever yet has been revealed,
Yet dull to those which fall from pity's eye!
And heedless still pure amber drops we spurn
Brighter than ocean ever can return.

The dove-eyed Button, with his flaxen hair,
His clustering silken curls, his silver voice,
And his sweet face with that expression rare
Which seems in heaven's own spirit to rejoice,
A mother's doating joy, a sister's pride,
A father's hope, rolls in the mighty tide!

Deep in the Mississippi's tangled bed
Button is smiling in eternal sleep;
Near where *La Belle Riviere* bounds forth to wed
The Father of the Waters. Spirits keep
Watch round his couch, and water maidens fair
Twine their long fingers through his golden hair.

The laughing boy! Farewell! Button farewell!
Another angel kneels at heaven's throne,
And in low, lute-like accents he will tell
The prayers of those who taught him lisp his own.
Farewell! Ere yet one stroke of sorrow given,
The happy boy went laughing up to heaven!

FARMERS' DEPARTMENT.

SCOTCH HUSBANDRY.

THE secret of the success of British agriculture, is *the proper division and application of expense and labor*. Until the Highland Agricultural Society was formed in Scotland in 1784, that country was as poor in its agriculture as may well be conceived. The face of Scotland, in the middle of the last century, was "as black as a howling wilderness;" up to that time, all the manure used upon the farm was put upon a little patch; no wheat of consequence was raised; the oat crops were full of thistles and weeds; and there was no rotation of crops. But by the concentrated efforts of the members of the Highland Society, means have been sought for obtaining and applying all the valuable manures, and bone-dust has been brought from foreign countries; the turnip husbandry has been gradually introduced, with other green crops—which, in that country, are substitutes for our Indian-corn crops—rotation of five or six years is practised, and the price of rent per acre, of lands before the improved cultivation of little value, has been raised to eight, ten, and twelve dollars, in the most distant parts of that country, where the business of raising cattle is almost exclusively pursued. The improvements of steam-carriage, by land and water, have brought the most distant counties of Scotland near to the Smithfield cattle-market of London, and that country is now said to be richer in her arable lands than any other of Great Britain.

The perfect system of British farming is worthy of our attention, an immense saving is realized in every large establishment from this system—the arrangement and system of the Lowell manufacturing establishments were copied from those of Manchester, so far as the condition of the two countries would admit; and the great farming establishments of Great Britain are conducted with as much order and system as are the manufacturing establishments: every man, every beast, every tool, has its place, and no time is lost in the day's work of any man. Horses are generally used, and perform with the plough or harrow, or other implements, much of the work that is done in this country by hand: a team of horses and a man are calculated to do the work of fifty acres of land, while the crops requiring the hoe in Scotland, are attended to by females

and children. The potatoes are planted and dug by the plough, and in almost every crop which here requires the hoe, there the work is done by the plough.

The expense of human labor is less in that country than in this. The annual cost of a pair of working-horses is set down at seventy pounds sterling—that of a man to drive them, thirty pounds, the whole cost of the team being two pounds ten shilling sterling an acre. This team labors every working-day in the year, is well kept, so that the horses are worn out only by age. It works its regular hours every day, never varying; these are, ten hours in the summer and eight hours in the winter, and this regularity secures to the farmer a full equivalent for the cost of his labor. Hon. Isaac Hill's Address.

FRUIT-TREES.

The following extracts from a foreign work will show the young people of our country how they keep up a succession of fruit-trees in Germany, and perhaps it may stimulate some of them to imitate so laudable an example.

"In the dutchy of Gotha, in Germany, there are many villages which obtain a rent of many hundred dollars a year for their fruit-trees, which are planted on the road-side and on the commons.—Every new married couple is bound to plant two young fruit-trees. The rent arising from the trees thus planted is applied to the use of the parish or town.

"In order to preserve the plantations from injury or depredation, the inhabitants of the parish are all made answerable; each of whom is thus on the watch over the other; and if any one is caught in the act of committing any injury, all the damage done in the same year, the authors of which cannot be discovered, is attributed to him, and he is compelled to atone for it, according to its extent either by fine or corporeal punishment."

"A gentlemen at Colchester, England, makes it a rule whenever he builds a cottage to plant a vine against its walls, and two or three apple and pear trees near to it, or in the garden, and thus he confers a greater benefit on his tenant, by giving him an innocent source of gratification to his children, and an excitement to a little extra industry on his own part, than if he had let him a comfortless, mean-looking hovel, at half the rent."

A few ornamental trees and shrubs, disposed with good taste about a farmhouse, add much to the beauty and pleasantness of the scene; and they never fail to make a favorable impression on the mind of a visiter, of the character of the inmates of the mansion. A season should never be suffered to pass by without some addition being made by the young people, to the ornaments of the yard, garden, or lane leading to the house. Some families have displayed their industry; taste, and good judgment, in this respect so conspicuously as to command the admiration of their neighborhood, and to excite the curiosity of travellers to inquire "who lives there."

Farmers' Cabinet.

CANKER-WORMS.

The orchard of Mr. Jabez Giddings, of Rocky Hill, has been overrun with worms for seven years—and is now entirely killed; so that he has determined to cut it down. Thus he has, by these insects, been deprived of seven years' fruit, and finally of a fine orchard—which he is now under the necessity of clearing off—all for the want of a little care and labor. By spending an hour per day for six months in the year, and one dollar per annum for tar with which each tree should be girdled below the branches, for the space of six or eight inches in width, an orchard of fifty trees might be preserved. The expense of this operation would not be more than twenty dollars per annum to any farmer, and most of them would perform it with their own hands, without being felt. The result would be the preservation of the trees, plenty of fruit for family use, and a surplus that would bring at least fifty dollars a year in the Hartford market. The fruit used at home is a full compensation for carrying the remainder to market. According to this calculation, the balance, in seven years, is two hundred and ten dollars loss, beside interest. But an orchard that produces an annual income of fifty dollars is as good as five hundred dollars at interest—this being added, makes Mr. Giddings total loss from neglect, over and above all necessary expenses for preservation, not less than seven hundred and fifty dollars—or on an average of one hundred and seven per annum—more than two dollars a year for each tree suffered to be overrun by canker-worms.

Hartford (Connecticut) Courant.

BLINDERS UPON HORSES.

Is there any real use in having blinds or blinders upon the bridles of carriage-horses? We doubt exceedingly if there need be, provided, nevertheless, as the lawyers say, the horses are trained as they ought to be in the beginning. We have known horses that would travel as well without them, and we believe much better. We have no doubt that nine tenths of the springing and starting of horses upon the road is owing to their being hoodwinked with those pads over their eyes, leaving only a small space to peep out, and that too not in the direction of true vision. Objects cannot appear distinct and natural when thus seen, and what wonder is it if they start when they discover what to them appears, in consequence of the indistinctness with which it is seen, some strange monster. Horses will run day after day in the pasture among rocks and stumps, without betraying the least fear, but when in harness will "shy" whenever they pass by one of those same rocks and stumps. Sometimes we meet with a horse that is partially blind or near-sighted, and these almost invariably start and are skittish. Instead of "blinders," such horses should have nothing over their eyes, or spectacles to improve their *optics*. There are many other improvements to be made upon harness.

We load horses too much with trappings. One quarter of the expense is incurred for useless straps, buckles, and buttons. The more light and

simple harness can be made compatible with strength and real use the better it is, and the more ornamental it will be. We need all the strength of the horse to draw the load, instead of bearing up a useless burden of leather and metal.

Maine Farmer.

NEW MODE OF DESTROYING THE BLACK GRUB, OR CUT-WORM.

The destruction of crops by the cut-worm is incalculable in most parts of the United States and countless remedies have been offered, but not one that strikes us more forcibly than the following, taken from a number of the Genesee Farmer. The whole secret consists in turning up the ground with the plough during winter, so as to freeze the eggs. A correspondent of Judge Tucker says: "One of my neighbors wishing to try the experiment, broke up one of his fields, adjoining the field of another neighbor—the two fields being separated only by a worm-fence—during warm spells in winter when the ground ploughed during the day would freeze at night. The spring following he again broke up the ground and planted it in corn, but not a cut-worm was to be seen the whole season; while his neighbor, who ridiculed the idea of breaking up ground in winter to prevent the cut-worm from destroying the corn, broke up his in the spring and planted it also in corn; but what was his surprise when he saw his field filled with cut-worms and his corn almost destroyed, while the adjoining field of his neighbor remained unmolested." The writer says, many experiments have been made and with universal good success.

The Agriculturist.

KEEP IT BEFORE THE PEOPLE.

In the following article the New Orleans Picayune very happily "hits off" the grandiloquent displays of political humbuggery with which the party newspapers of the day abound. It contains quite as much sense as a large portion of the patriotic appeals daily made to the "dear people," by those who set themselves up as party oracles, and manufacturers of orthodox political opinions.

Now or never, fellow-citizens, is the time for this important fact to be blazoned abroad. Trumpet the truth aloud, through the streets and from the house-tops. Tell it in Gath, and publish it in the streets of Askelon, in Washington, and in New Orleans, and in Algiers before New Orleans, and in the great future city of Bath behind New Orleans, and at Prairie Cottage, and at Bayou La Branche, and everywhere before and behind and around New Orleans, as well as in every other part, parcel, and portion of these great United States.

Keep it before the people! Awaken the echoes in the farthest corners of the Union, and thrill the nation with the loud reverberation. Fellow-countrymen, unborn millions are yet to pronounce upon our acts, so just look out what you are about. We are just stepping over the first stumbling-block in the way of republicanism, and and if you are not cautious you will bark your shins, sprain your ankles, or fall upon your noses. Two more big stones are in our path, and when we succeed in rolling them out of the way, we may at once proceed to laying the irons for a grand railroad track to eternity.

But *keep this thing before the people*, yes, and behind the people, and all around the people, so that the people can't possibly move without seeing or tumbling over it. Hang it upon the horns of the moon, that all the world may look at it, or if you can't hang it on the moon, hang it upon the tallest liberty-pole you can find, and if you can't find a liberty-pole, why, hang the thing, hang it somewhere else.

Only *keep it before the people*, because, although the people don't care two pins about it, yet, if you make a noise on the subject, it will appear very clear to them that the thing is of some consequence, and the more noise you make the better.

It would be an excellent plan to send out to China for a cargo of the loudest kinds of gongs, and set them a going all over the States to the tune of "Come to Dinner." Then, when you get the people all seated, with their mouths wide open, pull up the curtain, and exhibit this new Gorgon!

Freemen of America, guardians of the country, brothers of the press, we charge you, with tears in our eyes, to keep this thing before the people! Remember Bunker Hill and the battle of New Orleans, and keep it before the people! Think of the green graves of your buried grandfathers, and keep it before the people!—Think of your wives and children, and your children's children, and keep it before the people! Lay your hands upon your hearts, and keep it before the people! Put your hands in your pockets, and keep it before the people!

We don't know exactly what it is, or what it means, and we haven't time to inquire; but we observe all our political neighbors are extremely anxious about it, so, as in duty bound, we implore you, as you love your country, *keep it before the people!*

During the twenty-two years of the life of that diabolical foe to the human race, Genghiz Khan, it is computed by credible historians, that fourteen millions four hundred and ninety thousand persons lost their lives through his instrumentality. By his express command, one hundred thousand prisoners were beheaded in one day. His successor, Tamerlane, was considered of a more generous disposition, having never caused more than four thousand people to be *beat to death* at any one time in his reign!

Of all people upon earth, the Greeks dreamed the loveliest dream of life.

AMERICAN SCENERY,

IN THE NEIGHBORHOOD OF CANANDAIGUA LAKE, NAPLES, &c.

After leaving Rushville, about eight miles from Naples, the road winds through a romantic valley, hedged on the east and west sides by steep and beautifully wooded hills, interspersed with clearings and productive farms, extending to the bases of the shielding hills. About six miles from Naples, the sun, with the soft lustre of the season, hung above the forest-tops, emitting rays like light streaming through the painted glass of an old castle. The outlines of the hills from east to west, to the traveller below, presented a truly picturesque appearance. Their declivities were intersected by deep gorges, through which small streams descended with hollow murmurings to the shaded valley. The lake, which is a perfect gem, was hidden from sight by their lofty sides, darkened by evergreens and the pendent boughs of the weeping elm. Far in the distance towered the upland ridges, fringed with sylvan giants, that seemed to me like palisades fixed by Nature to guard her secrets from the assaults of Day.

We left our horses with a friend, and wandered up a glen that extended in an eastwardly direction from his house. Its course was sinuous, and the walk was difficult, owing to the tangled undergrowth and the massive blocks of slate piled up in the rudest magnificence. We at last reached a place where farther advance was prevented by precipitous walls of rock rising to the height of several hundred feet, whose sides were made beautiful by a few dwarf pines rooted in the hollow crevices, and which hung their scraggy arms over the abyss, forming an impenetrable barrier to the visitations of the dying sun. A waterfall, with its gurgling melody, trickled down the mountain, awakening in the mind a deep feeling of tranquillity. The timid woodcock now and then whirred by us, and our voices startled the partridge from his sequestered cover. It was a place of concealment where an anchorite might pitch his tent, a robber elude pursuit, or a hunted patriot bid defiance to the bloodhound of tyranny. The trees, far above on the rim of the encircling and overbrowing bluffs, were reduced by distance to the slight proportions of the shrubbery around us. It was a strange spectacle. The leaves of the trees were paler than those growing in the sunlight, and their trunks were clothed in a thick drapery of moss. A trailing birch hung its silver tassels above us, shooting abruptly from the side of the precipice, near which a fragment of rock, dislodged by its own weight from the bed of ages, rolled down, with a noise like thunder, almost at our feet, fearfully warning us that danger lurks everywhere—in calm as well as storm—in Nature's most quiet haunt as well as amid the rapids of Niagara.

In company with some friends who were with me, I thridded the twilight mazes of a gully lying southwest from the village of Naples, until I arrived at one of the most beautiful cataracts that ever gladdened the eye of the rapt painter or inspired bard. The waves fell with a solemn music, rendered almost sepulchral by the rocky walls environing the deep and faintly-lighted bottom of the dell, which "gathered and rolled back" in wildly-mournful echoings the deep-toned murmurs of the milk-white and agitated waters. After a pleasant walk in a northwestwardly direction from the cascade, we reached another fall that surpassed anything that ever presented itself in a poetic dream. The curving abutments of rock, embracing a massed and slate-paved area of eighty feet, gave an unnatural intonation to the voice. Huge layers of rock, loosened by the frosts of countless winters and the dissolving rains of so many springs, had crumbled away at the base making a recess that was continually wet by the spray of the miniature cataracts, falling from the height of forty feet or more over wave-worn and naked crags, savage in their rugged outlines and vast proportions.

A grotto large enough for the occupancy of two individuals, of square dimensions, penetrated into the rocky wall about sixteen feet, and in a storm the hunter could conceal himself in its slab-roofed chamber, and be effectually shielded from the howling wind, and the beating raindrops. The Egerian sibyl would have found there an abiding place, equal, in wild loveliness and quiet sublimity, to her immortal haunt—and I thought of the lines of Byron—

> "This cave was surely shaped for the greeting
> Of an enamored goddess, and the cell
> Haunted by holy love."

The brink of the bank above, overhanging the bed of the stream, was rendered picturesque by shelving rocks, in the clefts of which immense pines had fixed their everlasting anchorage, forming rude observatories for the lover of Nature to look down upon her wondrous works beneath. The sunbeams fell with a softened radiance upon the scene, tipping the feathery foam with a mellow, shifting drapery of gold, and a dreamy, autumnal haze hung its blue curtain upon the hills. On the southwest side a table-rock, projecting from the brow of a perilous precipice about two hundred feet above the dell and covered with dwarf evergreens, seemed the lookout place of the "Genius loci." About fifty feet from the fall, an immense furrow had been ploughed by some convulsion of the elements, that had borne down trees of ponderous growth, the mossy skeletons of which, lay like gigantic warriors overthrown in battle, in the deep, lone glen, indifferent to the sun that once gleamed upon their bark-mailed trunks, and the winds that once sported with their emerald crests.

On the southwest side, a rock, of slab-like form and about eighty feet above the bed of the stream, shot out from the side of the bank upbearing a natural mound of earth, of conical form overspread with a thick carpeting of pale moss, and from its apex a small cedar grew in rich luxuriance, like a funeral tree planted by Nature on the grave of some perished Dryad. In a southeastwardly direction from this beautiful feature in the scene, a natural tower made by ledges of rock of circular formation, rose from the bottom of the gully covered with vines and creeping

plants, that resembled the ivied banner that hung from the crumbling battlements of monastic or baronial ruins. At the point of egress from the circular area the sides of the dell incline toward each other, and the trees growing thereon intermingle their branches forming a thickly-matted and verdant canopy. New Yorker.

THE PERILS OF THE SEA.

PERHAPS the records of the human race do not present a case of a more narrow escape from apparently inevitable destruction and death to the whole of a gallant ship's crew than in the case of the *Peacock*, one of the sloops-of-war in the Exploring Expedition, when she sustained the injuries which obliged her to return, early in last March, to Sydney (New South Wales), to repair and refit. The following extract of a letter from a person on board that ship will give the reader some idea of it, though the nautical terms will make it less clear to some of our readers than to those who are familiar with them:—

"SYDNEY, N. S. W., *March* 16, 1840.

"Before this reaches you, you will probably have heard of our return to this port for repairs, having been compelled to do so by injuries sustained in the ice, by which we were confined for forty most anxious hours—for twenty hours with the imminent fear of most awful death. So closely was the ice packed around us, and in such vast masses, that even under a press of canvass, assisted by ice anchors and every other means that experience or necessity could suggest, we at times remained motionless for hours—the ice cutting into the vitals of the ship, and threatening to grind us to powder.

"On the evening of the—(date forgotten, and, being now in town, cannot refer)—having procured soundings and seen appearances of land, cheered with the prospect of reaching it, we worked in through heavy drift ice; and next morning, about 9 A. M., in endeavoring to avoid a large mass ahead, we gave her a sternboard, which almost instantly brought the rudder in contact with another mass, and so violent was the shock, that the rudder-head was wrenched off, and the rudder fixed immovably athwart ships, rendering the ship almost entirely unmanageble. We used every effort to wear her, but, like mad, she drove on through the ice, till it became so close as to be impassable. We then furled sails, planted ice anchors, and resolved to lie quiet till we could repair our rudder, when suddenly a large body of ice under our stern shifted its position, the anchors came home, and we drove down on a range of icebergs masthead high, and overhanging the decks, and with breathless anxiety awaited the shock, which nothing human could prevent—an immense impending mass tottering to its fall, and threatening to crush us beneath it. Our spanker-boom struggled for a moment, and then broke like a reed; the stern-boat crushed like an eggshell; and then went stern davits and all the upper works on the starboard side, as far as the gangway—every stanchion broken short off. The ship *rebounded!* We breathed again, and hauled aft jib and staysail sheets, and gave her a cant off from our inhospitable neighbor. We then made sail, and, by great exertions, had a most providential escape, after thumping off our *forefoot*, and cutting into the stern within an inch and a half of the "woodends," or within an inch and a half of our lives. Had our confinement been prolonged another hour, we should all have gone to Davy Jones.

"I have mentioned the anxiety with which we viewed the overhanging mass tottering to its fall. As soon as a sufficient space had intervened between our stern and the iceberg, *it fell!* harmlessly in our wake"

THE PARTICULAR LADY.

THERE is a coldness and a precision about this person's dwelling that makes your heart shrink back (that is, if you have the least atom of sociality in your nature) with a lonely feeling, the same you experience when you go by yourself and for the first time among decided strangers.

Everything is in *painful* "*order.*" The damask table-cover, you recollect, has been in just the same folds ever since it came from the vender's shop, eight years ago—(if the owner had not been so particular it would not have lasted so long)—and the legs of the chairs have been on the exact diamonds in the drugget they were first placed on; by-the-by, do you remember seeing that same drugget off the carpet underneath? No, for she never has company; the routing, the untidiness they would occasion, would cause the poor soul to be subject to fits for the rest of her natural, or rather unnatural, life. She is sometimes married, but was never known to have any family, but she is more often single than otherwise. In the days of good father Adam, this person did not exist, for ladies were not then so numerous as to be separated into classes, as they are now. When it first came to light, we are not sufficiently learned to determine. Though untidiness is a fault all people should avoid, especially the young, yet for mercy's sake, urge them not to be *particular*, in the very essence and quintessence of the word. She will become hateful in the sight of man, and stand no chance of being married.

I experienced the extreme pleasure of spending a few days with a *particular* friend (in both senses) a short time ago. Going rather earlier than I suppose she expected me, the first thing I found out, was a spare bedstead and furniture, covered up in a brown Holland case, or, rather, an immense bag.

The bedside carpets were folded up with the neatness of a silk handkerchief, and the swing-glass was in another bag. Were not these things enough to frighten not *extremely* tidy ones out of their wits? But this was not all; the cabinet piano was enveloped in a shroud which regularly took quarter of an hour to remove when it was

about to be used. The easy-chair that Mr. —— reclined on all day long was wheeled into another room every night, because the dust in sweeping the parlor before breakfast should not injure it. Of course all the carpeted rooms were covered with drugget, and brown Holland over that. But the dinner-table was the best; first, it is *always* covered with a fancy oil-cloth, upon the top of that was put a green baize, and over that was spread the spotless table-cloth; fearful of the latter being soiled, every dish and plate stood on a mat, and this said table-cloth was always folded in the same creases, at the end of its use, as at the first day. All the knives, forks, and spoons, were rubbed thin and genteel with cleaning. It was awful to go day after day into such bustless, orderly rooms, though no one is a greater enemy to uncleanliness than myself. I sighed—actually sighed—to see dust, if it had been only a single particle.

To the "particular," nephews and nieces are sad plagues, they are so untidy.

See how carefully she steps across the road, watching for every vehicle, and waiting till it is at least quarter of a mile distant, for fear of being splashed; and even in dry weather she crosses on the joints of her toes, and holds her dress above her shrunken ankles. She looks as though she were going to bite every passer-by in a crowded thoroughfare, that happens in the least to disarrange her dress. She is generally thin, and scraggy, and sallow. It is her constant fidget that wears all the flesh from her bones, and color from her cheeks.

She never can get a servant to stay with her; I never heard of but one "particular" lady who retained a domestic for six years, but then she was as "particular" as her mistress.

A NEW JERSEY HERO.

Captain Nathaniel Fitz Randolph, of Woodbridge, was one of the bravest and most intrepid men. Twice he was offered a colonel's commission in the regular army; but he preferred the command of his own select volunteers to any other service, and performed the most desperate deeds of valor.

He and his men were once surrounded by a greatly superior force of the British. Their uniform motto was "Death or Victory." The contest was maintained with great slaughter on both sides, until he stood literally alone, wading in the blood of his companions, who lay in heaps dead and wounded around him. In this condition, he seized a musket, and, being a man of great muscular strength, defended himself, and knocked down his enemies right and left with the butt-end of it, until the British commander became heartily sick of the contest, and begged that for God's sake he would desist and spare the sacrifice of human life, seeing that he must eventually fall into their hands dead or alive. He coolly replied that he was not yet a prisoner, and again placed himself in a posture of defence. The British officer renewed his entreaties, telling him he was the bravest man he ever saw, and that it was a pity so valuable a life should be lost in so unequal a contest; promising him the kindest treatment. At length, being covered with wounds, and faint and weak from fatigue and loss of blood, and no longer able to raise the weapon of defence, he reluctantly gave himself up, under the pledge that he should be well treated, and exchanged the first opportunity: which promised was faithfully performed, and he was soon again at liberty to take up his arms in defence of freedom. His bravery, intrepidity, and gigantic strength, made him a terror to the British wherever his name was known; but the tories and London traders were his most inveterate foes. A whole squad dared not encounter him in the daytime, even when he was alone.

On a certain occasion, when he was on a scouting expedition on Staten island, a party of tories secretly dogged him into a house in the evening, and, after he had laid aside his arms, rushed in upon him and made him prisoner—when, to his great grief and mortification, he remained nearly a year before he was exchanged.

At the head of his volunteers he once encountered a company of Hessians, one of whom being somewhat separated from the rest, took deliberate aim and wounded Captain R. in the arm. He plainly saw whence the ball came, the companies being very near together, and walking deliberately up to the fellow, as though he would say something to him, seized him under his sound arm, and brought him off a prisoner, while his gaping comrades stood motionless with surprise.

Captain R. was finally killed by a musket-ball in a battle near Elizabethtown, and buried at Woodbridge with the honors of war.

Newark (N. J.) Eagle.

DISTANCES OF STARS IN THE MILKY-WAY.

In regard to the *distances* of some of these stars, we may easily conceive that they are immense, and, consequently, far removed from our distinct comprehension. Sir W. Herschel, in endeavoring to determine a "*sounding line*," as he calls it to fathom the depth of the stratum of stars in the Milky-Way, endeavors to prove, by pretty conclusive reasoning, that his twenty feet telescope penetrated to a distance in the profundity of space not less than four hundred and ninety-seven times the distance of Sirius; so that a stratum of stars amounting to four hundred and ninety-seven in thickness, each of them as far distant beyond another as the star Sirius is distant from our sun, was within the reach of his vision when looking through that telescope. Now, the least distance at which we can conceive Sirius to be from the earth or the sun is 20,000,000,000,000, or twenty billions of miles; and, consequently, the most distant stars visible in his telescope must be four hundred and ninety-seven times this distance, that is, 9,940,000,000,000,000, or nearly *ten thousand billions* of miles! Of such

immense distances it is evident we can form nothing approaching to a distinct conception. We can only approximate to a rude and imperfect idea by estimating the time in which the swiftest bodies in nature would move over such vast spaces. Light, which is endowed with the swiftest degree of motion yet known, and which flies at the rate of nearly twelve millions of miles every minute, would require one thousand six hundred and forty years before it could traverse the mighty interval stated above; and a cannon-ball, flying at the rate of five hundred miles an hour, would occupy more than 2,267,800,000, or two thousand two hundred and sixty-seven millions eight hundred thousand years, in passing through the same space! a period of years before which all the duration that had passed since man was placed on this globe appears only like a few fleeting hours, or "as a handbreadth or a span."

Here, then, let us pause for a moment, and consider the august spectacle presented to view. We behold a few whitish spaces in the firmament, almost overlooked by a common observer when he casts a rude glance upon the evening sky; yet, in this apparently irregular belt, which appears only like an accidental tinge on the face of the firmament, we discover, by optical instruments, what appears to be an amazing and boundless universe. We behold not only ten thousands, but *millions* of splendid suns, where not a single orb can be perceived by the unassisted eye. The distance at which these luminous globes are placed from our abode, is altogether overwhelming; even the most lively imagination drops its wing when attempting its flight into such unfathomable regions. The scenes of grandeur and magnificence connected with such august objects, are utterly overwhelming to such frail and limited beings as man, and perhaps even more exalted orders of intelligences may find it difficult to form even an approximate idea of objects so distant, so numerous, and so sublime.

On our first excursions into the celestial regions we are almost frightened at the idea of the distance of such a body as Saturn, which a cannon-ball projected from the earth, and flying with its utmost velocity, would not reach in one hundred and eighty years. We are astonished at the size of such a planet as Jupiter, which could contain within its circumference more than a thousand globes as large as the earth. We are justly amazed at the stupendous magnitude of the sun, which is a thousand times the size of Jupiter, and which illuminates with its splendor a sphere of more than five thousand millions of miles in circumference. But what are all such distances and dimensions, vast and amazing as they are, compared with the astonishing grandeur of the scene before us! They sink into comparative insignificance, and are almost lost sight of amid the myriads of splendid suns which occupy the profundities of the Milky-Way. What is *one* sun and *one* planetary system in the presence of *ten millions* of suns, perhaps far more resplendent, and of a hundred times this number of spacious worlds, which doubtless revolve around them? Yet this scene, stupendous as it is, is not the universe. It is, perhaps, as we shall see, only a comparatively small corner of creation, which beings at an immensely greater distance will behold as an obscure and scarcely discernible speck on the outskirts of their firmament; so that, amid this vast assemblage of material existence, we may say, in the language of the inspired prophet when speaking of the Almighty, that *even here* is but "the hiding of his power." Dick.

FRICTION BETWEEN AIR AND WATER.

The friction between air and water often produces the most magnificent, and, sometimes, disastrous consequences; for its owing to this cause only, that the ocean rises into mountain-waves, before the force of which all the works of man are as nothing. It is true, that waves are often seen when the wind does not blow, or when it has ceased, because the ocean, when once set in motion, continues to roll after the cause has ceased to act. A boat rowed across a still lake forms waves which do not reach the shore until long after the line of the boat has been obliterated. Even the small motion given to a surface of water by the fall of a stone thrown into it will be perpetuated for many rods in circumference. This propensity in water to perpetuate any disturbance in the natural smoothness of its surface is the reason why the ocean rises into waves, mountains high, beyond the reach of the storms which first set in motion, and, perhaps, many days after the storm has ceased. Seamen often know, from the appearance of the ocean, that there has been a storm at a distance, though not a sheet of their own has been filled with a breeze for days or weeks. In rounding the Cape of Good Hope, it is said, that the swell of the sea is sometimes so great that each wave and each hollow is a mile across. During the continuance of the wind, and in places where the waves are owing to its friction alone, the effect may be counteracted by pouring oil on the water,* which, spreading, defends it from the contact of the air, and thus produces a calm. If this can be done at the windward side of a pond, where the waves begin, the whole surface it is said, will soon become as smooth as glass. It is said, also, that boats, having to reach the shore through a raging surf, have been preserved, in consequence of the sailors having thrown a barrel of oil on the water. Comstock's Natural Philosophy.

Sympathy does not become a monarch, for he is the father of his country, and his subjects he fairly looks upon as his children. Now a father does not always sympathize with his children, for he often knows far better than they do what is best for them, and his settled purpose to promote their welfare enables him to carry out what he is persuaded is for their good, without regard to their approval or disapproval.

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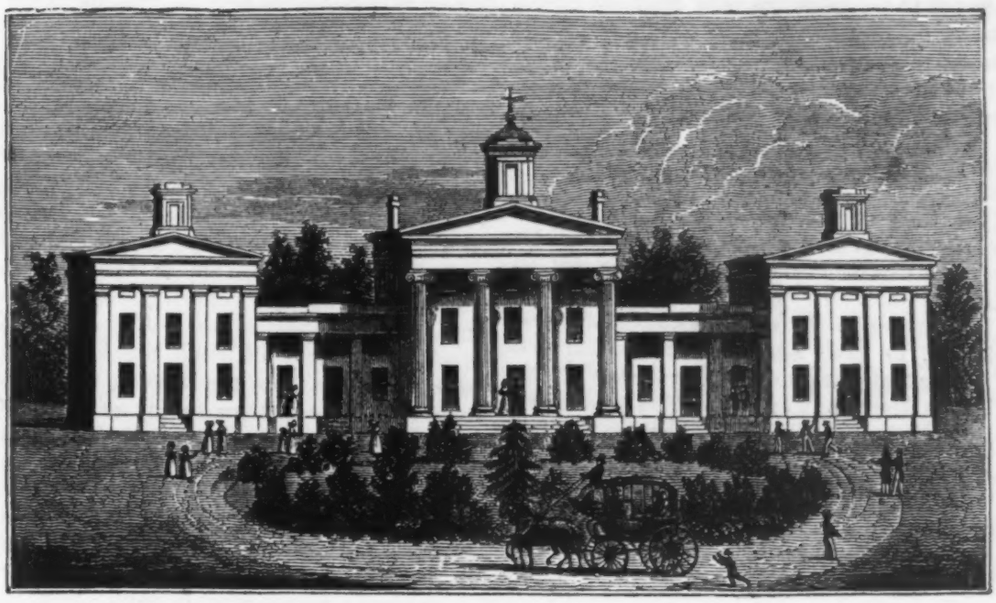
* Franklin first noticed this fact.



Smithville Seminary, North Scituate, Rhode Island.

This Seminary is located near the junction of the Hartford and Brooklyn Turnpike roads, nine miles from Providence. The stages on these roads leave Providence successively every morning, passing the Seminary and return at evening.

The Railroad line, leaving Providence on Tuesdays, Thursdays, and Saturdays, at 12 o' clock, A. M., also passes the Seminary and returns on succeeding days.

From Le Row's Politician's Manual.

COMMON SCHOOL SYSTEM OF NEW YORK.

In addition to the usual incentives to educate the youth of the land, this state has established a fund for the encouragement of general education. This fund is called *the Common School Fund*, and was established in 1823, by an act or law of the legislature, which appropriated the proceeds of the sales of a portion of the public lands for the establishment of this fund, and by new appropriations and the undivided interest of the original fund, together with a part of the United States' deposite, it has increased to $4,904,919.76. This fund, under the direction of the comptroller of the state, is loaned to individuals and banks, or invested in the public stocks; and the interest arising from this investment is annually divided among all the school-districts in the state, according to the number of children in each between the ages of five and sixteen. In 1845, the capital will equal five millions.

The amount of interest for the last year was $117,472.27, and the whole number of children in the state entitled to the benefit of the fund in January, 1840, was 557,229.

The present common school system of this state was established in 1812, by an act of the legislature, which directed the division of all the towns into convenient school-districts, and authorized the appointment of an officer in this state, who should be called the superintendent of common schools, who should have the general management of the common school system.

The interest of the school fund is drawn from the treasury on the warrant or authority of the comptroller, on the first of February of each year, and is paid over to the treasurer of each county, and by him, through the commissioners of common schools, to each district entitled to receive its benefits; the money so received is to be applied *only to the payment of teachers' wages.*

The law requires the inhabitants of each district to hold an annual school meeting, and special meetings may be held at the discretion of the trustees of the district, having been notified five days previously by the clerk of the district.

Any person who is a freeholder, or shall have been assessed, either the same or the preceding year in which he votes, to pay taxes in the town, or who shall possess property to the amount of fifty dollars liable to taxation, is entitled to vote at district school meetings; any person not thus qualified, who shall vote at a district meeting, renders himself liable to a fine of ten dollars.

When the district-school meeting is organized, it has power by a vote of a majority of voters present—1, to appoint a moderator; 2, to adjourn from time to time as they may think proper; 3, to choose a district clerk, three trustees, and a collector; 4, to select a site for their school-house; 5, to levy a tax sufficient to build, furnish, and keep in repair a school-house; 6, to lay a tax on the district not exceeding twenty dollars fot the first year, for the purchase of a library for the district; 7, to repeal, change, or modify their proceedings from time to time as they may think proper.

District Meetings, Schools, and Officers.

The officers of a school-district are not, strictly speaking, town officers, but as their duties arise

from an act of the legislature, they are here given. The district officers are five, a clerk, collector, and three trustees; they are all elected at the annual district meeting for one year, or, until others are elected to fill their places.

Duties of the Clerk.

It is the duty of the clerk to keep a faithful record of the proceedings of all the district meetings in a book; to be provided by the district, to record in said book all reports made by the trustees of his district to the commissioner of common schools; to give notice of all annual and special district meetings called by order of the trustees of his district; to notify adjourned meetings, when adjourned over more than a month; to keep and preserve all papers connected with his office, and at the expiration of his term to hand them over to his successor, and should he neglect any or all of the above duties, he is subject to a fine not exceeding ten dollars for every offence.

District Collector.

The collector receives from the trustees the *tax lists* and *rate bills*, and it is his duty to collect and hand over to the trustees or some one of them, within thirty days after he shall have received them, the sums of money specified in the *lists* and *bills*, retaining as a compensation for his services, twenty-five cents on each dollar received.

By a *tax list* is meant a list of all the taxable inhabitants of the district, made out by the trustees, with the portion of any tax which is assessed upon them set opposite their names. *Rate bills* made out by the trustees at the close of each term or quarter of the school, containing the names of all persons not exempt from the payment of teachers' wages, who have sent scholars to the school during the term or quarter, and the amount which each is to pay for teachers' wages. The rate bills are made out from the daily school list, kept by every teacher during the term of his school, containing the exact number of days each scholar has attended.

The tax list is made from the valuation of the last town assessments, and it is necessary that the district tax be assessed and the tax list made out within one month from the time the tax was voted by the district.

The trustees may require of a collector, before they deliver to him any warrant for collection, a bond, or security, to them in their corporate capacity in double the amount to be collected, to secure the faithful discharge of his duties; if any collector refuse or neglect to give bond within the time allowed him by the trustees (which shall not be less than ten days), his office may be vacated and another appointed in his place.

Trustees of School Districts.

The duties of the trustees are, to call special meetings when they may deem them proper; to give notice of annual, special, and adjourned meetings of the district in the absence or incapacity of the clerk, and in the same manner as the clerk is required to do, to make out the tax lists and rate bills, and hand them over to the collector, with their warrant, or authority, to collect the money thereon; to purchase or lease a site for the district school-house as previously directed by the district meeting, and to build, hire, or purchase, keep in repair, and furnish with the necessary furniture and appendages, the school-house, out of the funds collected and paid to them for that purpose; to have the care and safe-keeping of the school-house; to contract with and hire *faithful and well-qualified teachers;* to pay the wages of such teachers out of the moneys arising from the share of the school fund coming to their district so far as it will be sufficient for that purpose, and to collect the remainder from those who are liable therefor; to divide the money which falls to their district when directed by a vote of a legal meeting of the district into parts not exceeding four for each year, and to apply one such portion to the payment of the teacher's wages during each term in which a school shall have been kept; to exempt such indigent persons from the payment of teachers' wages as they think proper, and certify such exemptions to the clerk of the district.

It is also the duty of the trustees on the first day of January of each year, and on or before the first day of March thereafter, to hand to the commissioners of common schools* their report, dated the first of January of the year in which it is handed in; such report must be signed by a majority of the trustees, and must specify, 1, the whole time any school has been kept in their district during the year past, and distinguish what portion of the time such school had been kept by qualified teachers; 2, the amount of moneys received from the commissioners during the year, and the manner in which such moneys have been expended; 3, the number of children taught in the district during the year; 4, the number of children residing in the district on the last day of December, over five, and under sixteen years of age (excluding Indians and inmates of poor-houses).

PROGRESS OF MODERN TRAVELLING.

Our fathers were—and that within the memory of man—contented to convey their goods from town to town on pack-horses. Narrow roads, which barely admitted a string of these beasts, burdened with the needs of many towns, run on over hill and dale, and often were found worn deep between steep banks by the persevering traffic of ages, and overhung by trees, which had spontaneously sprung and grown over them, rendering them cool and pleasant. But the affairs

* The object of this report is to enable the commissioners to report the facts in regard to all the districts in the county to the superintendent of common schools, who receives like information from all the counties, and combines them in one general annual report, for the information of the people.

of our worthy ancestors became sensibly on the increase. The string of pack-horses slowly progressing over the wolds and through forests were found not equal to the demands of commercial exchange and speed; and they set their wits to work, and lo, Pickford's and Pettifor's wagons, and others, their contemporaries, appeared piled up in ponderous stateliness, and drawn by horses in bulk next to elephants. For their convenience, the old roads were deserted as too narrow, or filled up as too slumberously profound. New roads of an airy width were laid down, and Mr. McAdam showed himself, wtth his necromantic hammer and pebble-gauge in his hand, and coaches came galloping after him at ten miles speed per hour, loaded with eager and still impatient negotiants; roads of granite, or of limestone, however smooth, or however wide, or however covered with wagons, coaches, mails, horsemen, and the infinite variety of carriages of pleasure, travel, and parade, which now appeared on them, were found too few; and canals were cut; locks—wonderful things in those days—were invented; and heavy boats and light barges hastened to convey their freights of living things, and things for the living—market goods and market people to the places where they were wanted, or where they wanted to be. Well done, Englishmen! Things were come to a pretty good pass, it was thought. People said, wondering to one another—If our grandfathers could but raise from their graves and see all this how they would stare.

But it was soon found that the population and the needs of the country had outgrown even these accommodations. There was a cry for more conveyance and more speed. Some talked of balloons, some of velocipedes and some of perpetual motion. The old and the orthodox said "Let well be. Things move fast enough. There is no rest, no repose, no steadiness in this generation—all is hurry, hurry, hurry. It is perfectly distracting!" They even looked back to the old hollow roads and string of pack-horses with affectionate yearnings. Nevertheless a set of pig-headed fellows were busy with their brains; and began to utter strange speeches about the powers of steam. It was a thing which was to work our mines and mills, impel our ships, and convey us, with the velocity of a comet, from one place to another. Old men, and wise men too, laughed at such Quixotic vaporings; yet spite of their laughter, there were heard great hammerings, and filings, and fizzings, in the workshops of Watt and Bolton; and presently that mighty monster—steam engine—was seen pulling up buckets of water and heaps of ore out of the earth, and turning a thousand spindles in our factories. It has become locomotive, has mounted the roads and the ships prepared for it, and is now flying from town to town, and country to country, with us and our concerns in a manner so wonderful, that we shall soon find ourselves past wondering at anything. Do we not ride at the rate of thirty miles an hour and grumble at such a snail's pace—step over to America in ten days, and think it about five too long—and hear news from the East Indies in a little more than a month? Well done, Englishmen! as our fathers said, so say we—that is pretty well for another fit. William Howitt

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HORTICULTURE.

By Mrs. Lydia H. Sigourney.

If the admiration of the beautiful things of Nature, has a tendency to soften and refine the character, the culture of them has a still more powerful and abiding influence. It takes the form of an affection. The seed which we have sown, the bud which we have nursed, the tree of our planting, under whose shade we sat with delight, are to us, as living and loving friends. In proportion to the care we have bestowed on them, is the warmth of our regard. They are also gentle and persuasive teachers of his goodness, who causeth the sun to shine, and the dew to distil; who forgets not the tender buried vine, amid the snows and ice of winter, but bringeth forth the root long hidden from the eye of man, into vernal splendor, or autumnal fruitage.

The lessons learned among the works of Nature, are of peculiar value in the present age. The restlessness and din of the railroad principle, which pervades its operations, and the spirit of accumulation which threatens to corrode every generous sensibility, are modified by the sweet friendship of the quiet plants. The toil, the hurry, the speculation, the sudden reverse, which mark our own times, beyond all that have preceded them, render it peculiary salutary for us to heed the admonition of our Savior, and take instruction from the lilies of the field, those peaceful denziens of the bounty of heaven.

Horticulture has been pronounced by medical men salutary to health, and to cheerfulness of spirits; and it would seem that the theory might be sustained, by the placid and happy countenances of those, who use it as a relaxation from the excitements of business, or the exhaustion of study. And if he, who devotes his leisure to the culture of the works of nature, benefits himself—he who beautifies a garden for the eye of the community, is surely a public benefactor. He instils into the bosom of the man of the world, panting with the gold-fever, gentle thoughts, which do good, like a medicine. He cheers the desponding invalid, and makes the eye of the child brighten with a more intense happiness. He furnishes pure aliment for that taste which refines character and multiplies simple pleasures. To those who earn their subsistence by laboring on his grounds, he stands in the light of a benefactor. The kind of industry which he promotes is favorable to simplicity and virtue. With one of the sweetest poets of our mother-land we may say—

"————————Praise to the sturdy spade,
And patient plough, and shepherd's simple crook,
And let the light mechanic's tool be hail'd
With honor, which encasing by the power
Of long companionship, the laborer's hand,
Cuts off that hand, with all its world of nerves,
From a too busy commerce with the heart."

LITERARY NOTICES.

Pictorial Illustrations of the Bible. A book of great value, particularly to the Christian, bearing this title. is forthcoming from the press of Mr. ROBERT SEARS, 122 Nassau street, New York, and will make its appearance during the current month. We have examined the proof-sheets, both of the letter-press and the engravings, and we are sincere in the belief that a work more acceptable to the religious community has seldom appeared. In addition to two hundred pages of letter-press, illustrative of the historical incidents, landscape scenery, natural history, manners and customs, &c., of the countries to which the Sacred Volume refers and describes, there will be upward of TWO HUNDRED ENGRAVINGS illustrative of the text. As a knowledge of Palestine and the adjacent regions becomes more widely spread, greater is the public curiosity to know the particulars of that land, hallowed, in the mind of Jew and Christian, by associations exceeding all else in intensity of interest. Several volumes upon this subject have recently issued from the English press, but their price on this side of the Atlantic, has been a barrier to their extensive circulation here. The volume in question, will contain the gist of all that has heretofore been published, and will be furnished for the almost nominal price of *two dollars*, beautifully bound and gilt. Taking into consideration the character and value of the matter of the work, the handsome manner in which it is got up, and the very low price at which it is to be sold, we cannot for a moment hesitate in believing that an extensive sale will, in a measure, reward Mr. Sears for his laudable enterprise in compiling and publishing a work of this kind. No family should be without a copy.

Greyslaer: A Romance of the Mohawk. By Chas. F. Hoffman, Esq. Harper & Brothers. This is a capital tale, founded upon broad truths drawn from the fertile stores of the history of the Revolution. The scene is laid in the valley of the Mohawk, in the state of New York, the theatre of many of the daring exploits of Brandt and his followers.

As a proof of the favorable reception of this truly American book, a second edition has already been published, and a third is in press for aught we know. If it is not, it should be. American authors of merit like Mr. Hoffman should receive every encouragement, and for this purpose we go for a high protective tariff on all importations of foreign literature.

Two Years before the Mast. This volume is the one hundred and sixth of Harpers' Family Library. It is from the pen of Richard H. Dana, Jr., of Boston, and details his personal narrative of life at sea as a common sailor "before the mast." Were our seamen more frequently as observant as our author, and as industrious in noting down events of interest, what stores of instruction and amusement they might add to our literature by details of the thrilling scenes incident to the pursuit of a mariner. The volume before us is exceedingly well written and deserves an extensive circulation.

Harpers' School District Library. The Trustees of Common Schools and others on whom devolves the duty of procuring School-District Libraries, will do well, where libraries may be required the coming winter, to have their orders left with the booksellers, or agents of the publishers, immediately, so that there may be no disappointments from not obtaining them before the close of navigation. Last year the negligence of the proper officers induced not a little dissatisfaction in districts where libraries were not received, and country journalists will do their readers essential service by calling attention to the subject. Two series, comprising one hundred volumes, have been already published, and a third of fifty volumes, will be ready in a few weeks. The selection of works for the Library are all made under the direction of the Superintendent of Common Schools; they have uniformly received the strongest testimonies of approval from persons best qualified to judge of their excellence; and they are sold at a price below that of any similar publications ever printed. *Each volume is sold separately.*

The Man-at-Arms: Ry G. P. R. James, Esq. Harper & Brothers. Here we have two thin volumes (too thin for their richness) from the pen of James, on whom has fallen the mantle of the "Wizard of the North." The tale is founded upon events immediately preceding the dreadful massacre of the Huguenots on St. Bartholomew's eve. The romances of this writer have the same peculiarity that marked those of Scott—their historical facts are all delineated with a scrupulous regard to truth, and the reader rises from their perusal with a permanent satisfaction unknown to those who follow the angelic Euphemias and mock-heroic Fitznoodles of fashionable novels, through their career of intrigue, vice, and folly.

The Politician's Manual, by G. L. Le Row, A. M. William Wilson, Poughkeepsie, N. Y. This unpretending little volume contains a large amount of just that kind of information which every American citizen should possess, who feels a laudable desire to take an active part in society where each man is a component part of a great sovereignty. The contents of this work are adapted particularly to the wants of the people of New York; and it is the design of the author, we believe, to prepare a similar synopsis for each of the other states, if sufficient encouragement be given. It contains the Declaration of Independence, that great code of political ethics; the constitution of the United States, and the State of New York; also, the formation of the Judiciary, &c; the duties of all the state, county, and town officers of New York, together with general tables, political and statistical. We hope an extensive sale will reward the well-directed labors of the author.

Lady's Book for October. L. A. Godey, Philadelphia: Israel Post, 88 Bowery, New York. As usual, this excellent periodical is punctual in its time of publication, and rich in contents. It contains a splendid engraving by Dick, from a painting by Collins, R. A., called "Happy as a King." It is beautiful in design and execution, and to look at it makes one wish himself a boy again. Sixteen of the most popular authors of the day are contributors to this number, and furnish twenty-four original articles including a piece of music, dedicated to the Ladies of Philadelphia. Price only three dollars per annum.

THE

DECLARATION OF INDEPENDENCE

OF THE

UNITED STATES OF AMERICA,

IN CONGRESS, AT PHILADELPHIA, JULY 4, 1776.

[With the Facsimiles of the Signers, taken from the original Document.]

WHEN, in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the laws of nature and of nature's GOD entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold these truths to be self-evident — that all men are created equal; that they are endowed by their CREATOR, with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed; that whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation on such principles, and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate, that governments long established, should not be changed for light and transient causes; and, accordingly, all experience has shown that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same object, evinces a design to reduce them under absolute despotism, it is their right, it is their duty, to throw off such government, and to provide new guards for their future security. Such has been the patient sufferance of these colonies; and such is now the necessity which constrains them to alter their former systems of government. The history of the present king of Great Britain, is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these states. To prove this, let facts be submitted to a candid world.

He has refused his assent to laws, the most wholesome and necessary for the public good.

He has forbidden his governors to pass laws of immediate and pressing importance, unless suspended in their operation till his assent should be obtained; and when so suspended he has utterly neglected to attend to them.

He has refused to pass other laws, for the accommodation of large districts of people, unless those people would relinquish the right of representation in the legislature — a right inestimable to them, and formidable to tyrants only.

He has called together legislative bodies, at places unusual, uncomfortable, and distant from the depository of their public records, for the sole purpose of fatiguing hem into compliance with his measures.

He has dissolved representative houses, repeatedly, for opposing with manly firmness his invasions on the rights of the people.

He has refused, for a long time after such dissolutions, to cause others to be elected; whereby the legislative powers, incapable of annihilation, have returned to the people at large, for their exercise; the state remaining, in the meantime, exposed to all the dangers of invasion from without, and convulsions within.

He has endeavored to prevent the population of these states; for that purpose obstructing the laws for naturalization of foreigners; refusing to pass others to encourage their migrations hither, and raising the conditions of new appropriations of lands.

He has obstructed the administration of justice, by refusing his assent to laws, for establishing judiciary powers.

He has made judges dependant on his will alone for the tenure of their offices, and the amount and payment of their salaries.

He has erected a multitude of new offices, and sent hither swams of officers, to harass our people, and eat out their substance.

He has kept among us, in time of peace, standing armies, without the consent of our legislatures.

He has affected to render the military independent of, and superior to, the civil power.

He has combined with others to subject us to a jurisdiction, foreign to our constitution, and unacknowledged by our laws; giving his assent to their acts of pretended legislation.

For quartering large bodies of armed troops among us:

For protecting them, by a mock trial, from punishment for any murders which they should commit on the inhabitants of these states:

For cutting off our trade with all parts of the world:

For imposing taxes on us without our consent:

For depriving us, in many cases, of the benefits of trial by jury:

For transporting us beyond seas, to be tried for pretended offences:

For abolishing the free system of English laws in a neighboring province, establishing therein an arbitrary government, and enlarging its boundaries, so as to render it at once an example and fit instrument for introducing the same absolute rule into these colonies:

For taking away our charters, abolishing our most valuable laws, and altering fundamentally the forms of our governments:

For suspending our own legislatures, and declaring themselves invested with power to legislate for us in all cases whatsoever.

He has abdicated government here, by declaring us out of his protection, and waging war against us.

He has plundered our seas, ravaged our coasts, burnt our towns, and destroyed the lives of our people.

He is at this time, transporting large armies of foreign mercenaries to complete the works of death, desolation, and tyranny, already begun, with circumstances of cruelty and perfidy scarcely paralleled in the most barbarous ages, and totally unworthy the head of a civilized nation.

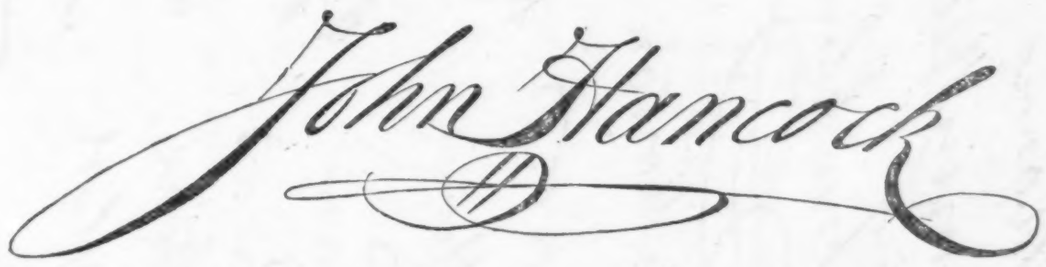
He has constrained our fellow-citizens, taken captive on the high seas, to bear arms against their country, to become the executioners of their friends and brethren, or to fall themselves by their hands.

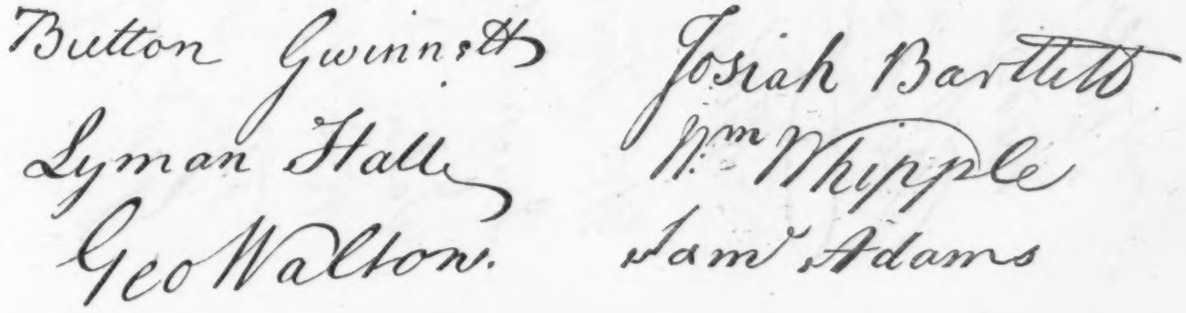
He has excited domestic insurrections among us, and has endeavored to bring on the inhabitants of our frontiers, the merciless Indian savages, whose known rule of warfare is an undistinguished destruction of all ages, sexes, and conditions.

In every stage of these oppressions, we have petitioned for redress in the most humble terms; our repeated petitions have been answered only by repeated injury. A prince whose character is thus marked by every act which may define a tyrant, is unfit to be the ruler of a free people.

Nor have we been wanting in attention to our British brethren. We have warned them from time to time of attempts by their legislature, to extend an unwarrantable jurisdiction over us. We have reminded them of the circumstances of our emigration and settlement here. We have appealed to their native justice and magnanimity, and we have conjured them by the ties of our common kindred to disavow these usurpations, which would inevitably interrupt our connexions and correspondence. They, too, have been deaf to the voice of justice and consanguinity. We must, therefore, acquiesce in the necessity which denounces our separation, and hold them, as we hold the rest of mankind—enemies in war—in peace, friends.

We, therefore, the representatives of the United States of America, in general congress assembled, appealing to the SUPREME JUDGE of the world for the rectitude of our intentions, do, in the name and by the authority of the good people of these colonies, solemnly publish and declare, that these United Colonies are, and of right ought to be, free and independent states—That they are absolved from all allegiance to the British crown, and that all political connexion between them and the state of Great Britain is, and ought to be, totally dissolved; and that, as free and independent states, they have full power to levy war, conclude peace, contract alliances, establish commerce, and to do all other acts and things which independent states may of right do. And for the support of this declaration, with a firm reliance on the protection of DIVINE PROVIDENCE, we mutually pledge to each other our lives, our fortunes, and our sacred honor.





Rob Morris
Benjamin Rush
Benj. Franklin
John Morton
Wm Hooper
Joseph Hewes
John Penn
Wm Paca
Thos Stone
Geo Taylor
Jas Wilson
Geo Ross
Benj. Rush
Jno Witherspoon
Fras Hopkinson
John Hart
Abra Clark
Francis Lightfoot Lee
Carter Braxton
Caesar Rodney
Geo Read
Thos M: Kean
Edward Rutledge
Thos Lynch Junr
Arthur Middleton
Geo Wythe
Richd Henry Lee

Th Jefferson
Benj Harrison
Th Nelson jr.
Matthew Thornton
Wm Hopkins
William Ellery
Roger Sherman
Charles Carroll of Carrollton
Geo Clymer
Ja Smith
John Adams
Robt Treat Paine
Elbridge Gerry
Wm Floyd
Phil. Livingston
Jaan Lewis
Lewis Morris
Sam W Huntington
Wm Williams
Oliver Wolcott

LEAVES FROM HISTORY.

THE GUNPOWDER PLOT.

No event in the record of persecutions for opinion's sake, which appears upon the page of English history from the reign of the eighth Henry to that of the second Charles, is more important, considered in reference to its probable results had success attended it, than the famous conspiracy entered into by several Catholic gentlemen of the highest respectability, commonly known as the gunpowder plot;—a plot having for its object a no less important result, than the annihilation of the king of Great Britain and his family, and the members of both houses of parliament, at a single blow. This attempt occurred during the reign of James I., and in the year 1605. To arrive at tolerably correct conclusions respecting the enormity of the guilt of the conspirators, and with the benevolent feeling of charity for the weakness of human nature, to seek for some palliation for an offence so enormous, it is necessary to take a brief glance at antecedent events.

During the latter part of the reign of Queen Elizabeth, many barbarous penal laws were enacted for the purpose of destroying the Roman Catholic religion, yet powerful from the strength it received from the fostering care of her predecessor, Mary. Although none directly suffered death for opinion's sake, yet many, very many, were sorely harassed by persecutions, and goaded on till a thirst for revenge found a place in the bosom of almost every devout Catholic, who valued the prerogative of religious freedom.

Recusants, those who had become proselytes to the Catholic faith, were more harshly treated than others; and it was from among the friends and relatives of these recusants that those bold conspirators who aimed at such wholesale murder as was contemplated in the gunpowder plot, arose. Among these recusants, Sir Thomas Tresham (father to Tresham the conspirator), Edward Rookwood, and Thomas Throckmorton (uncle of Catesby the principal conspirator), were the most conspicuous. The former spent full twenty-five years amid the most bitter persecutions in the form of fines and imprisonments; and the others, with hundreds more, were continually harassed because they chose to worship God after the dictates of their own consciences.

On the death of Elizabeth, the Catholics felt strong hopes of a change of policy toward them, for they had been assured that James of Scotland, her successor, was a mild and tolerant prince. To be sure, however, that their hopes were well grounded, Percy (afterward one of the conspirators) was sent to Edinburgh, to ascertain the king's intentions; and so favorably was he impressed with the monarch's manner and declarations, that he returned to his brethren with tidings of joy that made the Catholics, as a body, the firm adherents and friends of James.

But before three years had elapsed, their best hopes were crushed, for the penal laws of Elizabeth were not only brought into force against them, but to them were added barbarous regulations which rendered the condition of the Catholics more miserable than it was during the preceding reign. They saw no hope of relief in the future, and many of the most loyal subjects of the crown, who were Catholics, began seriously to think upon open rebellion as a just and righteous alternative for them to choose. Among these was Robert Catesby, a lineal descendant of the minister of Richard III., of that name; a man of ardent temperament, whose thirst for revenge ran parallel to his zeal for his peculiar religious tenets. He it was that first conceived the design of destroying at one blow the king and parliament, and of establishing without delay, by such means, the Catholic power in Great Britain. In palliation for a conception so horrid, it may be remarked that Catesby had suffered much and long, from fines and imprisonments, and that his plans were formed while he was smarting under the goad of persecution.

Catesby first disclosed his design to his bosom-friend and fellow-sufferer, John Wright of Yorkshire, who at once entered warmly into the cause. Next, Thomas Winter, a mutual friend of both, was advised of their plan. He was a fine scholar, and by his extensive knowledge of several continental languages, he had become acquainted with many influential members of foreign Catholic courts. At first, Winter, who was a conscientious man, was not informed of the extent and sanguinary character of the plot; but at a meeting of the three at Lambeth, during Lent, in 1604, Catesby revealed the whole to him. At first, Winter refused to engage in a plot so horrid, but was at last induced to lay aside his scruples. This effected, it was determined that he should go to Flanders, where Velasco, high constable of Castile, was on his way to England, to conclude a peace between James and the king of Spain, and endeavor to get him to introduce something into the treaty that should be favorable to the Catholics, and lead to their final admission into an equal rank with other citizens of Britain. Winter was also instructed to bring with him some daring spirit in whom they could repose confidence, so that, in case the mission of Velasco should fail, they might have some efficient man to aid them, who was unknown in London. Such a man Winter found in the person of Guy Fawkes, an English soldier of fortune, who had joined the Spanish army in Flanders, and won much ap-

plause for his bravery at the taking of Calais, in 1598.

Winter and Fawkes arrived in London in April 1604, and a few days thereafter, Thomas Percy (beforementioned), a near relative of the duke of Northumberland, joined the conspiracy. These five agreed to take a solemn oath of secresy, before Catesby should reveal to them the whole particulars of his plan. They accordingly met in a house in the fields then beyond St. Clement's inn; and the following oath was administered to each: "You shall swear by the blessed Trinity, and by the sacrament you now propose to receive, never to disclose, directly or indirectly, by word or circumstance, the matter that shall be proposed to you to keep secret, nor desist from the execution thereof, until the rest shall give you leave." This oath was sworn in the most solemn manner, upon their knees; after which, Catesby revealed his plan to Percy, and Winter and Wright to Fawkes. After a brief discussion as to the best means for carrying out their plans, they withdrew to an upper room, where they heard mass and received the sacrament from the hands of a Father Gerard, a Jesuit missionary.

The plan of Catesby was to run a mine below the hall in which parliament assembled, into which was to be introduced a number of barrels of gunpowder, to be ignited at the moment when the king should be haranguing both houses, and thus destroy at a blow the king, royal family, lords, and commons. It was believed that Prince Henry would be with the king and queen; and as his younger brother, on account of his tender age, would probaoly be absent, it was resolved to assassinate him. They also intended to manage the plan in such a manner as to keep the princess Elizabeth (also a child), at the house of Lord Harrington, in Warwickshire, and as soon as the blow in London should be struck, to seize her and proclaim her queen. Though more than twenty persons were engaged directly and actively in this horrible conspiracy, the secret was sacredly kept for more than a year and a half.

To carry out their plans more secretly and surely, it was necessary to get a house contiguous to the houses of Parliament, and one was found in the occupation of a tenant of the king's wardrobe keeper. Percy purchased this man's interest in May 1604, under pretence of making it very convenient for him as a gentleman pensioner. Fawkes, who was unknown in London, acted the part of Percy's servant, and kept the key of the apartments. They immediately commenced operations by perforating the thick walls under the parliament house; and by collecting gunpowder and other combustibles in a house at Lambeth, which was intrusted to another conspirator named Robert Keyes, a man, poor in fortune, but rich in personal endowments, and connected with the barons of the time, of that name.

The adjournment of parliament until the seventh of February, 1605, caused the conspirators to postpone operations until November preceding. During the autumn, the treaty between the kings of England and Spain was signed, in which was no clause in favor of the Catholics; and the judges, on departing for their respective circuits received orders from the Star Chamber to enforce all the penal laws. Had the conspirators prior to this felt any scruples in performing the great task they had assumed, these proceeding would have dispelled all, and made them desperate.

On the eleventh of December, 1604, the conspirators entered the house which Percy had hired, with tools and provisions, and immediately commenced the perforation of the thick wall. They had scarcely begun operations, before they ascertained that parliament had been further prorogued till October, 1605. They then set about strengthening themselves by an addition of numbers. Robert Winter, a brother of Thomas, John Grant, and Thomas Bates, Catesby's servant, were admitted during the Christmas holydays. In January they commenced their labors, but were alarmed by a great noise they heard overhead, and fully expected that they were discovered. Fawkes brought them information, however, that a man who occupied the cellar directly under the house of lords, was selling off his coals (which caused the noise), and recommended his fellow conspirators to hire the cellar and abandon the mine. This they did, and thirty-six barrels of gunpowder were immediately brought over from Lambeth, and put in the cellar, mixed with stones and bars of iron, to make the contemplated breach more terrible; and the whole was carefully concealed by fagots of wood. By May, all was prepared and the apartments closed up.

Others were now admitted into the conspiracy, among whom was Sir Edward Digby, an enthusiastic young man; Ambrose Rookwood, and Thomas Tresham. It was agreed to strike the blow on the fifth of November, on which day the king and all the members would be congregated in the house of lords; and as the time approached, the conspirators had frequent meetings at a solitary house in the suburbs of London. It was determined that Fawkes should fire the powder by a slow match, then escape on board a vessel waiting for him in the Thames, and go to Flanders, and do what he could there for the cause. Their great care now was to endeavor to save members who were Catholics, and dear friends to many of them. Catesby assured them that the peers in question, who were all Catholics, would not be present, for they would consider it useless to be there; "but," he concluded, "with all that, rather than the project should not take effect, if they

Bates. R. Winter. C. Wright. J. Wright. Percy. Fawkes. Catesby. T. Winter.

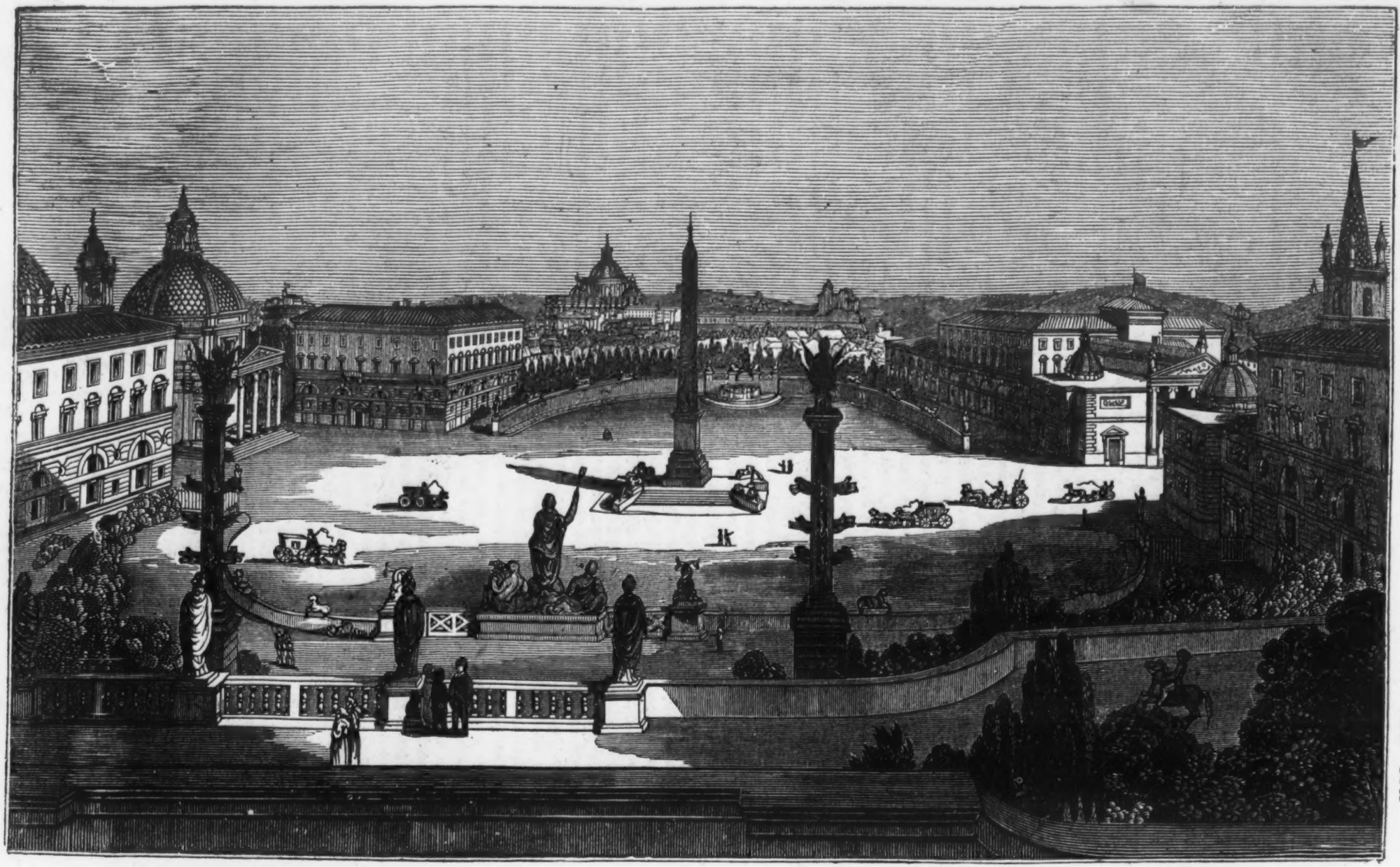
were as dear to me as mine own son, they must all be blown up."

On the twenty-sixth of October, Lord Monteagle, a bosom-friend of Tresham, received a letter warning him to keep away from the parliament house, and intimating that a sudden and terrible blow was about to be struck.

On receiving this letter, he tossed it over to a gentleman in his service, who, the very next morning warned the conspirators through Thomas Winter, that the letter had been sent to the Minister, Cecil. Tbe conspirators at once suspected Tresham, who was then in the country, and he was immediately summoned before them, on his return to town. Catesby charged him with the authorship of the letter, but Tresham denied it with a clear, unfaltering voice, and solemn oaths; and well he did so, for they had determined to assassinate him on the spot, if he showed the least signs of guilt.

Fawkes, not aware of the letter in question, was put in great jeopardy by the others, by being sent by them to see if the door of their vault had been disturbed; but when informed of the danger he had escaped, he replied that he should have gone just as readily had he known it, and was now determined to go every day till the fifth, for the same purpose. The lords of the council, having correctly ascertained the danger hinted at in the letter, communicated the whole matter to the king. Caution was necessary in averting the impending danger lest the conspirators should become alarmed and escape, and it was resolved to take no step in the matter till the night of the fourth. On Sunday, the third, the gentleman in the service of Lord Monteagle, warned the conspirators that the king had seen the letter, and that their detection was certain. Tresham too, urged them to flee, but the bold Catesby and the still bolder Fawkes could not be intimidated. That night Fawkes kept watch in the cellar; and on Monday afternoon, the fourth, he received a call from Lord Chancellor Suffolk and Lord Monteagle, who pretended that they were in search of some stuffs of the king's that were missing. They carelessly asked Fawkes his name, to which he replied that he was the servant of Mr. Percy. After a few other remarks, the visiters departed, and Fawkes hurried to acquaint Percy of the event. Still they did not flee, and that night Fawkes went again to the cellar. About two o'clock on the morning of the fifth he opened the door to look about him, when he was seized and carried into the bed-chamber of the king at Whitehall, where he was thoroughly examined. He boldly avowed his purpose—said he was sorry it had failed; but, notwithstanding he suffered the torture for several days consecutively, he did not reveal a single secret but such as it was useless to conceal.

The other conspirators fled from London, immediately after the arrest of Fawkes, but instead of leaving the country as they had an opportunity to do, they joined a number of Catholic gentlemen at the seat of Sir Edward Digby, with the hope of yet raising the great body of their brethren to rebellion. In this they were disappointed; and after fleeing from place to place they were finally attacked on the borders of Staffordshire, where three of them were killed, and the others taken prisoners, who, with two Catholic priests were all executed in January, 1606.



VIEW OF THE PIAZZA DEL POPOLO, FROM THE PINCIAN HILL.

ROMAN PIAZZE OR SQUARES.

In Rome, where most of the streets are narrow and crooked, the number and size of the open squares produce a most agreeable effect. These squares are generally adorned with ancient Egyptian obelisks, or splendid fountains, and in some cases with both. Several of the finest of modern churches and palaces are situated on these free spaces, while others contain ancient temples, columns, and majestic ruins. Indeed there is scarcely one of the Roman piazze but offers some beautiful or otherwise interesting object, either ancient or modern, to the admiration of the spectator.

The Piazza del Popolo, or "Square of the People," represented in our engraving, is the first seen by the traveller arriving from the north, and though far inferior in architectural and antique treasures to several others, it is well entitled to attention. Having the advantage of being the first seen by our countrymen, it is generally found to have made a deep and lasting impression on them. It may, indeed, be almost called the great entrance into Rome, and is the point whence the impatient eye is first delighted by a vast interior view of the eternal city.

After driving over part of the ancient Campus Martius, through a long avenue of high walls, which prevent the stranger from seeing much of that scene of the military training and exercises of the old Romans, he reaches the Porta del Popolo, or "Gate of the People," which stands upon or near to the site of the celebrated Flaminian gate, which was the great northern entrance of old Rome. The modern gate, though in part the work of the great Michael Angelo, is rather defective and mean. The principal defect arose from the circumstance, that four ancient columns, of insufficient size for the elevation required, were assigned to him for its decoration. The smallness of these columns obliged him to raise the other members of the order beyond their due proportion, and the whole terminated in a deficiency of grandeur. "But this," says Forsyth, "will ever happen, where the design, instead of commanding, is made subject to the materials." After passing the Porta del Popolo, the stranger soon finds himself driving across a fine spacious square. An Egyptian obelisk stands up nobly in the centre—in a line from it, the great street called the Corso, a mile long from the square to the foot of the capitol, flanked on either side by a church, opens a direct road into the heart of the city—palaces and churches present themselves on every side—the "vast, the wondrous dome" of St. Peter's is seen to the right, and on the left the steep acclivity of the Pincian Hill, in part cut into ornamented terraces, rises from the Piazza del Popolo.

Our view is taken from the Pincian Hill. The terraces, the statues, and the rostra, that form the foreground of the picture, are all modern, and, in part, recent works. The square itself has nndergone many improvements of late years. The most conspicuous and interesting object in it is the obelisk, which is one of twelve of those extraordinary masses of granite cut by the Egyptians, brought to Rome by different emperors from Augustus down to Constantine, overturned and buried in the barbarous ages, but recovered and set up for the embellishment of the modern city by different popes. The height of the ancient shaft of the obelisk in the Piazza del Popolo is about 78½ feet, but unfortunately it is not entire—it has been broken in three pieces. Its whole height, with the modern base and substructure, is about 116 feet. Its sides are covered with hieroglpyhics that are partially injured or defaced. It was erected where it now stands in the year 1589, by order of Sixtus V., who was the first of the popes to give attention to these magnificent relics of antiquity. Before erecting this one in the Piazza de Popolo, he had set three other obelisks upright on bases in different parts of Rome—viz, one in front of the church of St. Peter, in 1586, another in front of the church of Santa Maria Maggiore, in 1587; and the third in the square of San Giovanni Lateranense, in 1588.

The author of "Rome in the Nineteenth Century," and several others who have written on the subject without a proper examination of the objects and their history, have strangely confused the obelisk in the Piazzi del Popolo sometimes with that in front of St. Peter's, and sometimes with that erected by Augustus in the Campus Martius, and removed thence to Monte Citorio in 1792. The author of the book just mentioned has applied the description of the difficulties encountered in raising the obelisk in front of St. Peter's (a much larger shaft in one entire, unbroken piece, and the first that was raised) to the elevation of this smaller column, which, as we have mentioned, and as is distinctly stated by the architect employed in the work, was broken into three pieces, and consequently infinitely more easy to move and set up.

The height of the ancient shaft of the obelisk which now stands in front of St. Peter's, is 83 feet 2⅘ inches. When Sixtus V. decided upon erecting it, men stood aghast at the dangers and toils of raising so enormous a mass of heavy stone, and two or three years elapsed in preparation before the work could be performed. The Papal court consulted men of science all over Europe, and numerous plans from architects, engineers, and mathematicians, were sent to Rome from all quarters. At last the plan of Domenico Fontana, one of the successors of Michael Angelo in the works of St. Peter's was accepted and acted upon.

The day on which the obelisk was to be raised was ushered in with great solemnity. High mass was celebrated at St. Peter's, and the architect and workmen received the benediction of the Pope, who implored heaven to prosper them in their undertaking. At a given sign engines were set in motion by an incredible number of men and horses, but not until fifty-two unsuccessful efforts had been made did the mighty mass rise from earth and swing in air. The moment it was set upright the thousands gathered to witness the spectacle shouted aloud, the cannons roared from the castle of St. Angelo, and the church bells began to ring all over the city.

According to an old local historian, the raising

of this obelisk cost 36,975 Roman crowns; and another old writer says, "the work was terminated in the *short space* of one year, in 1586." The writer last alluded to describes the machinery and methods employed by Fontana, and also gives an engraving. The engraving is scarcely intelligible, but we see in it a resemblance to the "large beams of wood planted upright, and looking like a forest of machinery," and "the long, thick ropes veiling the sky with a kind of close netting," mentioned by Ammianus Marcellinus in describing the erection of an obelisk at Rome in the time of Constantius, the son of Constantine the Great. The historian of Fontana's exploit says—"In raising the obelisk before St. Peter's, there were forty argani (capstans), to each of which were put four horses, hearty and robust, and twenty men. So that there were 160 horses, and 800 men, for the said argani alone; beside many more men occupied by divers other offices, as standing round about the machinery and working above it. And on the top of the huge machine, which looked like a castle, there was a trumpeter, and also a large bell. And the trumpeter, immediately on a sign being made to him by the capo mastro, or architect, blew his trumpet, and then all the capstans were worked together by the men and horses; and when they were to stop, the bell was rung. In this manner the orders were understood, and all passed off well; whereas, if the human voice had been employed to give the word of command, it would not have been possible to avoid disorder, for the noise was like that of thunder or an earthquake, so great were the creaking, groaning, and convulsion of all the machinery, by reason of so heavy a bulk as the obelisk."

The same machinery, reduced in force and magnitude, we are informed, served Fontana for the setting up of the obelisk at Santa Maria Maggiore, of that at San Giovani Lateranense, and of the one in the Piazzi del Popolo; and we are expressly told by the architect's biographers that, after his first great task with the obelisk in the front of St. Peter's, he found the erection of the other three comparatively easy work, for they were all broken, and the fragments were raised and adjusted one after another.

As it now stands with its parts united, the obelisk in the Piazza del Popolo is, in size, next to the obelisks before the churches of St. Peter and St. John Lateran, being higher than the other nine Roman obelisks now erect. The sides of the stone are of unequal width; those on the north and south, which correspond, are seven feet ten inches at the base, and four feet ten inches at the summit. The other two sides or faces of the obelisk, at the same positions respectively, are, at the base, six feet eleven inches, and at top four feet one inch. The northern face of this obelisk has been much injured by fire. Some local writers have settled to their satisfaction that this injury was sustained during Nero's burning of Rome. It may, or it may not have been so, for Rome has been the scene of many a conflagration since then. A much better established fact is, that the obelisk in the Piazza del Popolo is one of two that the emperor Augustus caused to be transported from Egypt to Rome, and erected in the great circus. Pliny says it was first quarried by an Egyptian king, during whose reign the philosopher Pythagoras visited Egypt. This would give the shaft an antiquity of more than twenty-three centuries. Their age, the mysterious country of their origin, the history of their importation into Europe by the conquerors of old Rome, their overthrow by the barbarous invaders of the empire, their re-erection by the popes of modern Rome, the innumerable vicissitudes and tragical changes that have occurred since they were first placed erect in the Circus Maximus, the Campus Martius, or similar spots of renown, all tend to give great interest to these obelisks, which are grand and imposing objects in themselves, and which, moreover, are seen in no other city in Europe. At Constantinople, indeed, there is one which produces but little effect in the large square of the Hippodrome, and in presence of the towering minarets of Sultan Achmet's mosque, and there will now be another erected at Paris; but these solitary specimens are as nothing compared with the obelisk wealth of Rome.

We recommend to such of our readers as may be curious to ascertain the history and objects of Egyptian obelisks, the first volume of "Egyptian Antiquities," published in the "Library of Entertaining Knowledge." We are not aware of the existence of any account of these works of ancient art which is at once so complete and concise as the one there given.

The Piazza del Popolo, which is now one of the busiest and most frequented parts of Rome, was a desolate waste in the middle ages. There is a curious legend told by all the old chroniclers and local historians, which, if it exposes the superstitions of the times, shows also (what it is better to commemorate) the enduring popular horror of cruelty and tyranny. According to this tale, on the spot where the church of Santa Maria del Popolo now stands, there once stood a great chestnut-tree, "under which were hidden the infamous ashes of the Emperor Nero, that were guarded by many malignant spirits, who with divers insults never ceased by night to molest the passengers."—"Now, for these reasons, in the year of grace 1099, the pope, Paschal II., resolved that the said tree should be cast down, and the impious ashes of the wicked king be taken up and scattered to the winds."

Accordingly, the papal court went in procession to the spot, where the pontiff himself was the first to strike the tree with an axe. The tree was then utterly destroyed and rooted up, and the ashes of the tyrant, or what were supposed to be such, were dispersed. A Christian altar was erected over the pagan's grave, and in process of time the altar grew into a church."

Penny Magazine.

If it is true, in the literal sense, that all the wisdom of the world is folly in the sight of heaven, is it worth a man's while to live to the age of seventy?

ON THE EFFECTS OF ARTS, TRADES, AND PROFESSIONS, AS WELL AS HABITS OF LIVING, ON HEALTH AND LONGEVITY.

BY CHARLES A. LEE, M. D., NEW YORK.

No. II.

Before we enter upon an examination of the effects of particular trades and professions on health and longevity, it seems proper that we should take a more general survey of our subject, and present those grand results which have been obtained by various observers and writers on medical statistics, in different parts of the world, and especially such as apply to our own country. The mechanic and the laborer are interested also in learning the amount of sickness which each one may rationally expect in the course of a year, so that they may be prepared to meet such casualties, free from pecuniary embarrassment and mental anxiety. Fortunately, since the establishment of beneficial societies in Europe and this country, we have the necessary data by which to calculate with considerable accuracy the liabilities to sickness among the working classes. The English societies have arranged the different degrees of illness under three distinct heads, viz:—

1. *Bed-fast sickness.*—Where the individual is incapable of exertion, and confined chiefly to bed.

2. *Walking-sickness.*—When the patient is unable to work, but keeps about.

3. *Permanent sickness.*—Where the patient has a chronic disease, as palsy, or dropsy, or is maimed, or incurable.

Between the ages of 30 and 40, it is found that out of every 100, 1.32 are sick in the Scotch societies, and 1.83, or nearly 2 per cent., in the English. Between the ages of 60 and 70, 10.8 are ill in the former, and 11.26 in the latter; showing that the amount of sickness, as we might expect, increases with the age. Taking the average of all ages, 2.45 in the Scotch societies, and 2.76 in the English, are sick. Many persons, however, are obliged to labor, whose health is far from being good. Were their circumstances easy, they would doubtless be found on the sick list. Thus Dr. Forbes ascertained, that of 120 Cornish miners in actual employment, only 68 had good health: of the remaining half, 26 had difficulty of breathing, 14 pains in the chest, 10 pain of stomach and bowels, 5 lumbago, &c.

In the years 1830, '31, and '32, returns were made from the various dock-yards in England, by which it appeared that 1 man in 6 is seriously hurt, 2 in 5 fall ill annually; each man, on an average, has an attack of illness, either spontaneous or caused by external injury, every two years; and on an average, each disease lasts 14 days. Out of 21,000 laborers employed in the dock-yards in England, 2 per cent., or more than 420, are constantly kept at home by diseases, two thirds of which are independent of accidents.

A very valuable document was published in England, in 1823, in the form of a large volume; being a report of the state of health among the men employed by the East India Company in London, 2,461 in number. As each patient on the sick-list is seen every day by the surgeon (being allowed 1*s.* 6*d.* sterling per day while unable to labor), he remains no longer absent than the case requires. From these data, Dr. Mitchell, the reporter, calculates the following results, which embrace a period of ten successive years. A date was kept of every death, as well as the time when any laborer ceased to be employed, by being superannuated, pensioned, dismissed, or by voluntarily leaving the service of the company.

Table of the Duration of Sickness per annum, for every Age from 16 *to* 81.

AGE.	Average duration of sickness per annum for every man employed.	Average duration of sickness for every man sick.
	Days.	Days.
Under 21	4.02	13.96
21 to 31	4.94	18.70
31 to 41	5.06	22.63
41 to 51	5.31	23.21
51 to 61	7.00	28.60
61 to 71	10.08	29.07
71 to 81	11.63	31.77

It appeared from other calculations, that the annual rate of mortality was 3.13 per cent. Among the laborers from 40 to 50 years of age, the annual mortality was 2.43; while among the male population of London generally it was 2.54: although the mortality under 40 was less than the general mortality of London, yet above 40 it was much higher. Between 40 and 50 it was 67 per cent., and between 50 and 60 as much as 82 per cent. higher than the mortality at the same ages in all England.

Dr. Mitchell did not attempt to explain this remarkable fact; but states, on the other hand, that the men were well supplied with food and clothing; that their work, without being hard, ensured regular masculine exercise; and in sickness, that they had rest and proper medical attendance. One fact however is mentioned by another writer, which to our mind is of far more importance than some would perhaps attach to it; and that is, the uncommonly free use among the men of intoxicating drinks, especially malt liquors. The extreme unhealthfulness of the latter, especially their tendency to render slight wounds and injuries fatal, has been noticed particularly by Sir Astley Cooper, Dr. Trotter, Dr. McNish, and other medical writers; and we have no doubt that the increased mortality among the East India Company's laborers, above 40, is due chiefly to this cause.

Of these 2,461 laborers, 10 per cent. were pensioned in the course of ten years; 8 per cent. were discharged or quitted the service; 1 in 4 had an attack of sickness; 1 in 60 was constantly on the sick list; 1 in 21 was a pensioner; and 1 in 6 of the pensioners died annually.

What we would call the *morbility*, or liability to sickness, of any population, depends much on local circumstances, which may render a situation salubrious or unhealthy. Taking our country as a whole, it will not perhaps compare with England for salubrity; but *there*, calculations from very extensive data prove, that 100 of the efficient male population are not liable to more

than 25 severe attacks of disease in the year. Every *four* years, each man is liable to a serious and protracted disease, disabling him from labor; but this does not include syphilis, or accidents, or the numerous ailments which cause men to apply for medical aid while able to pursue their work, all of which would probably raise to 50 per cent. the proportion of the population attacked annually.

Mr. Finlaison,' the Actuary of the English national debt, has shown, from very extensive data, that among the industrious poor, of London, members of benefit societies out of 1,000,000 of males, the proportion constantly sick at the age of 23, is 19,410; at 28, 19,670; at 33, 19,400; at 38, 23,870; at 43, 26,260; at 48, 26,140; at 53, 27,060; at 58, 36,980; at 63, 57,000; at 68, 108,040; and at 73 and upward, 317,230. Thus we see that from 23 to 33 there is no increase of sickness; from 33 to 43, the increase is 6,860, compared with the preceding ten years; from 43 to 53 the increase is only 800; from 53 to 63 the increase is 29,940; from 63 to 73 it is 260,-230!

In the Portsmouth dock-yard, 37.8 per cent. of the men fall ill, and 16 per cent. meet with accidents in the year. In the Plymouth dock-yard, out of 2,147 cases, 635 did not exceed 3 days' duration; and if these be substracted, the proportion attacked will be only 24 per cent. The surgeon of the Liverpool Beneficial society reports 57.2 per cent. of the members as having received medical advice in the year, of whom 8 per cent. met with accidents: these, of course, belonged to all the different arts and trades. In the Deanston cotton works in Scotland, after deducting cases of less than three days' duration, the annual attacks of sickness among males was 20 per cent.; among females, 44 per cent. This would seem to show, either that females are more liable to attacks of disease, or that they apply for medical advice and give over working on slighter occasions than males.

We have seen that the average duration of sickness among the men employed in the English dock-yards, was 14 days; among the East India Company's laborers it was 22 days; in the English hospitals, 39 days; in the Paris hospitals, 35 days. These institutions, as is well known, receive the most severe cases; often, those of a chronic character; and in numerous instances, those that are incurable.

In this country, the results, so far as we have been able to ascertain facts on the subject, do not differ greatly, in our principal cities, from those above given; but taking the country at large, they are considerably more unfavorable. In large districts, bilious, remittent, and intermittent fevers prevail to a great extent. For example: the aggregate mean strength of the United States Army for the last year, according to the Surgeon-General's report, was 8,850 men; the number of attacks of sickness during the year was 22,248, and the total of deaths 214; showing that the proportion of cases of disease to the number of men in service was as $2\frac{1}{2}$ to 1, or 249 per cent.; the ratio of deaths to the number of men as 1 to 42, or $2\frac{4}{10}$ per cent.; and the proportion of deaths 1 to 107, or a fraction less than 1 per cent. This is a very low mortality, when we consider that large numbers of the troops were employed in Florida and other unhealthy districts, during the sickly season, and speaks highly in favor of the medical skill of our army surgeons.

The average number of deaths among all the patients treated in the British hospitals, both city and country, is about 6 per cent.; the lowest being 3, and and the highest 9 per cent. It has also been ascertained—1. That the mean duration of each case increases as age advances; and—2. That the mortality among the attacked augments with age, at the same rate as the mortality among the entire number living. The mortality among the patients treated in American hospitals is rather less than in the European.

Professor Caspar, of Berlin, has devoted much attention to the subject of medical statistics, and has drawn up the following table as the result of his investigations. Taking 100 individuals in each calling, the number who attained the age of 70 have been among—

Divines	42
Agriculturists	40
Employed in high offices	35
Mercantile persons and trades	35
Military men	32
Employed in lower departments	32
Advocates	29
Artists	28
Teachers and Professors	27
Medical Practitioners	24

From this table, it seems that the probable duration of life is greatest among divines, and least among physicians. The causes of this low scale of vitality among medical men are, doubtless, great physical and moral exertion, exposures to vicissitudes of weather, fatigue, loss of sleep, irregularity of meals, mental affections, particularly anxiety of mind, contagion, &c., most of which are constantly recurring, and sapping the vital powers.

Taking 1,000 divines and 1,000 physicians, whose names had been collected indiscriminately throughout Prussia, the following table exhibits the number that died between certain periods:

Ages.	Physicians.	Divines
23 to 32	82	43
33 to 42	149	58
43 to 52	160	64
53 to 62	210	182
63 to 72	228	328
73 to 82	141	255
83 to 92	30	70
	1,000	1,000

From as complete an examination as we have been able to make of the comparative mortality of the two professions in the United States and Great Britain, we are satisfied that nearly the same ratio exists in both countries. In no country on the globe are the duties of the practising physician more arduous or trying to the health

than in our own, particularly in the thinly-settled districts of our western states and territories; and in our southern cities, the average duration of the lives of medical men, after entering on the practice of their profession, is still more disproportioned to that of the other classes.

Owing to the want of sufficient data, we are unable to give the comparative mortality among those pursuing the different arts and trades; yet an observation of many years has put us in possession of a sufficient number of facts to determine with considerable accuracy as to their relative salubrity. These results, with appropriate comments, will be presented hereafter.

The mortality of various countries differs very materially. Dr. Hawkins gives the average mortality of the Pays du Vaud as 1 in 49; of Sweden and Holland, 1 in 48; of Russia, 1 in 41; of France, 1 in 40; of Austria, 1 in 38; of Prussia and Naples, 1 in 33 to 35; and of South America, 1 in 30. The same writer very erroneously estimates the mortality of this country as 1 in 30, while the American Almanac makes it 1 in 50: our own calculations make it 1 in 56. Professor Dunglison estimates the annual mortality of England and Wales at 1 in 58; varying however in the different counties, from 1 in 47 in Middlesex to 1 in 83 in Anglesey and Pembroke. Late calculations show that the average mortality in many parts of New England is as low as in any part of Great Britain.

It has also been found that there is no exact ratio between the mortality and the longevity of a district, although the proportionate mortality will be greater where the duration of life is less. Thus some of the counties of England, which are the most favorable to longevity, are not those in which the mortality is least. And the same is true in this country. Princess Anne county, in Virginia, which abounds in malarious diseases, at the last census had, in a population of every 20,000, 24 slaves of 100 years and upward; which probably exceeds the ratio of centennarians in the same population in any part of the United States. It is however worthy of remark, that the number of colored persons who attain the age of 100 and upward, bears a large ratio to the whites in every country; and what is very remarkable, the proportion of slaves that reach this period, compared with the free colored race, is in the ratio of 14 to 1.*

Fodere estimates that the value of life is one-third greater in non-marshy districts than in large cities; and Hufeland infers that the mortality in cities may be estimated at 1 in 25 or 30, while in the country it is about 1 in 40 or 50. In Philadelphia it is 1 in 47; in Boston, 1 in 42; in Baltimore, 1 in 41; in New-York, 1 in 37; in Charleston, 1 in 36.

In New England, according to calculations made by different physicians in different parts, the annual mortality is as low as 1 in 70. The following is the ratio of mortality in the several places mentioned:—Rocky Hill, (Weathersfield, Ct.) average for 46 years, 1 in 71; 1 in $6\frac{1}{3}$ of the deaths being from consumption. Townsend, Vermont, average of 11 years, 1 in 68. Weathersfield, Ct., average of 64 years, 1 in 64. Hartford, Ct., 1 in 56; New Haven, Ct., 1 in 58; Middletown, Ct., 1 in 68; Portsmouth, N. H., 1 in 68; Worcester, Mass. 1 in 61, taking an average of 4 years. Quincy, Mass., average of 9 years past, 1 in 69.

The following is a *sample* of the numerous facts which attest the great longevity of the people of New England:—In the village of Rocky Hill, Ct., of the 705 deaths that have occurred during a period of 46 years, 157 occurred after 70, or 1 in $4\frac{1}{2}$; and 1 in 11 arrived at 80 and upward. (*Boston Med. and Surg. Jour.* passim.)

It appears from the Prussian statistical tables, that out of a million living male births, there will die in the first year of life 180,492 infants; and out of the like number of living female births there will die 154,705 infants.

From calculations made by Mr. Finlaison on 9,347 lives and 4,870 deaths of annuitants recorded by the British Life-Assurance Societies, it appears that the mortality is at a minimum at the age of 13, whence it rises until the age of 23; from which point it declines to the age of 34; and from this it again rises until 48, when it is the same as at the age of 23. In other words:—1. The rate of mortality falls to a minimum at the close of the period of childhood.—2. From this point the mortality rises till the termination of adolescence, or the commencement of adult age.—3. From the commencement of adult age the mortality again declines, and continues to decline to the period of perfect maturity.—4. From the period of perfect maturity the mortality rises, and uniformly, without a single exception, returns at the age of 48 to the point at which it stood at the termination of adolescence. The period of infancy includes precisely 3 years: that of childhood, 10 years; and that of adolescence, 10 years: making in all, 23 years. The interval between the period of adult age, and that when life just begins to decline from its meridian, includes a term of 24 years; so that a period greater than all the other epoch of life from birth to adult age is enjoyed, during which mortality makes no advance whatever. This epoch of maturity, during which mortality is stationary, may be protracted, while the other epochs are definitely limited. Thus we see some persons apparently younger at 60, or even 70, than others are at 50.

The habits of living, &c., in the early periods of life, have a great influence in hastening or retarding those physiological changes on which age depends. To illustrate:

Out of a million, 180,492 die the 1st year; 5,742 the 13th; 15,074 the 23d; 11,707 the 34th; 14,870 the 48th; 29,185 the 58th; 61,741 the 68th; 114,255 the 78th; 246,803 the 88th: at 84, about the same number die as during the 1st year of infancy. These calculations are not

* At the census of 1830, New England contained a population of 1,954,704, including 20,000 negroes, and only 35 persons over 100 years of age. The same census gave 738,470 as the population of North Carolina, of whom 304 had attained the age of 100 years and upward. The ratio of the first being 1 in 55,848; and of the second, 1 in 2,425. France, with a population of 36,000,000, contained only 537 persons over 100 years of age; being 1 in 67,048.

without interest to those who desire to attain great longevity, as they show that the extension of human life depends on prolonging the period of maturity, and not that of juvenility nor senility, which are fixed.

The chief cause of the increased insalubrity of cities is ascertained to be the vitiation of the atmosphere. Three hundred thousand people require 300,000,000 cubic feet of pure air daily; but how can this be obtained, where gases, and effluvia, and poisonous exhalations, from a thousand sources, are pent up and prevented from diffusion, by narrow streets, and high walls, and innumerable enclosures? Some of these gases, such as the carbonic acid, are heavier than the atmospheric air, and of course gravitate so low as not to be disturbed by the aerial currents which move about the houses. The evil, to a certain extent, is unavoidable; but much can be done, by way of prevention, by removing from cities those causes which produce the poisonous exhalations. Slaughter-houses, and other establishments which give rise to animal or vegetable effluvia, should be removed; streets should be kept clean by sweeping, and by daily currents of water admitted to the gutters and sewers; public squares should be opened; narrow streets widened; trees, which absorb carbonic acid in large quantities, should be extensively planted; and sewers should be constructed to carry off below the earth the filth which is now permitted to stagnate and decompose on the surface. All these measures are practical; and there can be no doubt that if carried into execution, the annual mortality of large cities would be diminished from 10 to 20 per cent. When we come to treat of public hygiene, we shall enter on a more minute investigation of this important subject.

Am. Rep. of Arts.

ORIGIN OF WORDS.

If one turns up Dr. Johnson, or any other grave etymologist, the term *News* is found ascribed to the Latin *novus*, new. We cannot help admitting that this derivation is a very probable one; still he must certainly have been an ingenious and clever fellow who hit upon another way of accounting for the origin of the word, by representing, namely, as compounded of the first letters of the cardinal points, North, East, West, and South; whereby is to be understood, that *news* signifies information from all quarters. This is a good idea, and worthy of note, though it *be* fanciful. The word *Sarcasm* has a fearful derivation. It comes from the Greek *sarcadso*, to *pick the flesh off*; and, in truth, sarcasm may be justly said to pick the flesh, not off the body, but off the *mind*—if such an expression is allowable. Does any of our readers know what is the origin or derivation of the word *Gas*? If any one of these same readers is sitting by the fireside—for the nights are now chilly—and is engaged in going over the Journal aloud, for the benefit of a dear little domestic circle, let him lay down the paper upon his knee, and put the question around—Who can tell the derivation of the word *Gas*? And if no one can say, as may very readily be the case, since Todd's Johnson merely calls it a "word invented by the chymists," then let him read on, and let them know that the term gas sprang from the same source as *ghaist* or *ghost*, both being from a Teutonic word signifying *spirit* or supernatural being, and variously spelt, *gast*, *ghais*, or otherwise, according to the different Teutonic dialects. Now, some of the mineral springs of Germany exhale a vapor, which hangs above them in the semblance of a light thin cloud. This being seen, was occasionally taken for a *ghais* or ghost, but those who had a little more wit at their finger-ends knew the thing to be neither more nor less than a vapor. From this deceptive appearance, however, arose the custom of applying the term *ghais* to all vapors or aeriform bodies, and, being adopted by the continental chymists, the word soon became universal in this sense. Upon the same principle which led us to call the pope a bridge-maker, we might say our streets are lighted with ghosts! By-the-bye, may not this circumstance of vapor arising from natural springs, under certain states of the atmosphere, be the origin, source, and foundation, of all the *white ladies* that ever haunted wells, from the Naiads of old Greece, to that beautiful apparition that flitted for a moment, before the gaze of the last lord of Ravenswood, when, in fulfilment of his sad doom, he sought to win the heart and hand of the unhappy Bride of Lammermuir!

The word *calamity* has a very curious origin. It is derived from *calamus*, a Latin word signifying a *reed*, and also a *stalk of corn*. Now, the Romans, in their early days, before they became attached to much less praiseworthy pursuits, were great farmers, and reckoned a storm which destroyed their crops one of the heaviest possible misfortunes. On a storm of this kind, from the nature of the property which it chiefly injured, they bestowed the name of *calamity*, and in the course of time they applied the term to all mishaps whatsoever. *League*, in the sense of a union or association, is a word of uninteresting etymology, but it is otherwise when it signifies a measured space—*three miles*. Formerly, it must be understood, *white stones* used to be placed at the end of every three miles upon the republic's highways—for we cannot say in this case the *king's* highways—in each of the states of Greece, much with the same view, we suppose, as our own milestones are put up. The word for *white*, in Greek, is *leukos*; and from *leukos*, according to the most probable etymology, came the word *league*.

Emolument is a word derived from an humble source. It comes from *mola*, the Latin for a mill, and at first denoted the miller's profit or multure, but by-and-by came to signify gain of any kind, to whomsoever it fell. *Conspirators* is the next term to which we have to allude, and few words have a more expressive origin. It springs from *spiro*, to breathe, and *con*, together; and no doubt the Romans, who applied the word conspirators in its present sense, intended to express by it

that plotters are obliged to *breathe* or *whisper* their purposes to each other for fear of detection. *Talents* unquestionably originated in the employment of the word in the New Testament, to signify the gifts bestowed by the Creator on man. *Suffrage* is a remarkable word. Its present meaning, we need scarcely observe, is the vote and voice of a person given at an election, or to decide any controverted point. It springs originally from the Latin *suffrago*, which signifies—what does the reader think?—the joint of a beast's leg! What earthly connexion, it may be well be asked, has the leg of a horse, a cow, or pig, or any other animal, with a human being's vote? Why, the *camel* bends its suffrago, or its knee-joint, to permit its rider to mount; and, figuratively speaking, a mounting spirit receives a similar favor from those who help him on his course by their votes. From the resemblance of the camel's condition to that of a supporting elector, is a vote called his *suffrage*, through the imaginative genius of some word-coiner.

The Roman soldiers, at some period of that people's history, received part of their pay in salt, *sal* in their own language. This custom gave rise to the word *Salary*, a synonyme for stipend. We use the verb to *Immolate*, in the same sense as *sacrifice*. It does not, however, primarily signify "to slay a victim," but to sprinkle its head, before it was slaughtered, with barley-flour and salt. This composition of flour was called *mola*, probably from the word signifying a mill. All etymologists admit the world *Rival* to be derived from *rivus*, the Latin for a river or brook. But it is not so clear how the derivative word came to have the sense of antagonist or opponent. The most simple conjecture is, that the term Rival was at first applied to persons who had properties on different sides of a stream, and were thus *locally* opposed to each other. Others imagine that it arose from the contests of those who feed their flocks near the same stream, about the possession of the water. But the best account, we think, of the matter, is that given by a French writer, which we now translate. "The term Rivals properly designated those who had rights of fishery in one and the same stream; and as these rights were often the subject of dispute between the parties, the signification of *rivals* was ultimately extended to all who had conflicting pretensions to anything."

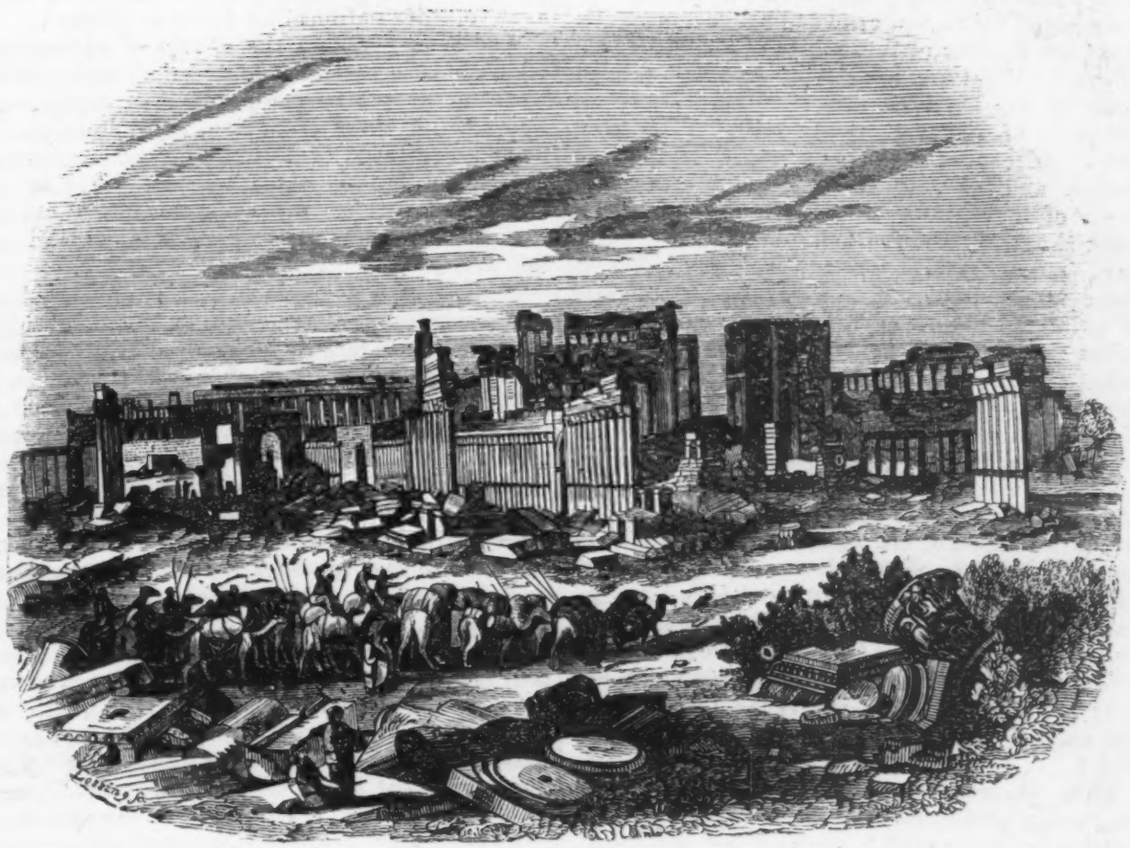
The derivation assigned to the word *Crocodile* is very fanciful. It is traced to *crocos*, saffron, and *deilon*, fearing; in allusion to which roots old Fuller quaintly remarks, that "crocodiles' tears are never true, save when he is forced where saffron grows, knowing himself to be all poison, and it to be all antidote; whence he is called the *saffron*-fearer." Other derivations, also, are mentioned, but we must take leave to regard them all as equally doubtful with the statement that the crocodile has the faculty of shedding tears in the excess of his emotions.

We are not very sure if our juvenile friends will be at all disposed to acquiesce in the appropriateness of the derivation of the word *School*. Its root is said to be the Greek word *schole*, ease; and the freedom, from bodily toils, of those who engaged in the pursuits of learning, is held to have originated the term *school*. "Times are changed," we think we hear some hopeful youngsters say, "the *body* is not now so free from toil, and trouble, and sore annoy, as all that comes to." But let that pass; the ferule will disappear. People have often attempted to analyze the word *Genius*. Its etymology, we imagine, settles that very fairly. It is from *genitus*, the Latin for *generated* or *born*; and therefore the original meaning of *genius*, seems to be "that which is born with us." We must confess, however, that it is often a difficult matter to tell what qualities are natural to a man, and what are acquired—unless, indeed, phrenology is resorted to in the matter, which is a proceeding the world does not appear to be inclined in all cases to adopt. *Caprice*, a word signifying something freakish, fanciful, whimsical, is understood to come from the Latin *Caper*, a goat—an animal which is said occasionally to display, upon the mountainous slopes where it browses, a peculiar friskiness of temperament—a tendency to kick up its heels, and to perform other humorous feats, which fully justify the derivation from its name of the word under consideration. *Caper*—the English word—is doubtless from the same source. *Congruity* is a word that properly signifies "a coming well together." It is compounded of *con*, together, and *grus*, a crane; cranes being remarkable for their regularity and uniformity, when flocking together for the purpose of migration. This is the true etymology of the word *congruity*.

Few persons, we should suppose, have thought much about the origin of the word *funeral*. This gloomy term signifies, in the original Latin, a *rope* end, being derived from the word *funis*, a rope. Burials, among the Romans, were anciently solemnized by torch-light, and the torches were composed of cord or rope, with wax and resin about them. Hence the term *Funeral*. *Mausoleum* is a word of congenial meaning. It originated in the circumstance of a widowed queen of old erecting a splendid tomb over the remains of her husband, whose name was *Mausolus*. The tomb was admired, and the name, in a monumental character, perpetuated. *Stipulate* is a word derived from *stipula*, the Latin for a *straw*. This is a point admitted, but in other respects the etymology is dubious. One author says that, in claiming, buying, or mortgaging, ground, straws were used or exchanged, to represent the ground, and therefore such a transaction was called a stipulation. Other authors say that the ancients, in entering into mutual engagements, broke straws, and that the subsequent junction of the straws denoted recognition of the compact. Whatever may be the way in which straws were used in making contracts, certain it is that they were used in many countries; and hence the phrase *stipulation* originated.

Chambers' Journal.

Fortunate people seem to think that their less happy fellow-creatures ought to suffer and die before them with decency.



Ruins of Palmyra.

PALMYRA.

In a former volume of the Magazine, we gave a near view of some of the principal ruins of Palmyra, with a brief sketch of the rise, progress, and decay of this once magnificent city of the desert. The above engraving represents the general appearance of all these ruins at the present day. The following eloquent record of the meditations of a traveller while sitting amid these relics of past grandeur we copy from M. Volney's "Survey of the Revolutions of Empires:"—

Here, said I to myself, an opulent city once flourished; this was the seat of a powerful empire. Yes, these places, now so desert, a living multitude formerly animated, and an active crowd circulated in the streets which at present are so solitary. Within those walls, where a mournful silence reigns, the noise of the arts and the shouts of joy and festivity continually resounded. These heaps of marble formed regular palaces, these prostrate pillars were the majestic ornaments of temples, these ruinous galleries present the outlines of public places. There a numerous people assembled for the respectable duties of its worship, or the anxious cares of its subsistence; there industry, the fruitful inventor of sources of enjoyment, collected together the riches of every climate, and the purple of Tyre was exchanged for the precious thread of Serica; the soft tissues of Cassimere for the sumptuous carpets of Lydia; the amber of the Baltic for the pearls and perfumes of Arabia; the gold of Ophir for the pewter of Thule.

And now a mournful skeleton is all that subsists of this opulent city, and nothing remains of its powerful government but a vain and obscure remembrance! To the tumultuous throng which crowded under these porticoes, the solitude of death has succeeded. The silence of the tomb is substituted for the hum of public places. The opulence of a commercial city is changed into hideous poverty. The palaces of kings are become the receptacle of deer, and unclean reptiles inhabit the sanctuary of the gods. What glory is here eclipsed, and how many labors are annihilated! Thus perish the works of men, and thus do nations and empires vanish away!

The history of past times strongly presented itself to my thoughts. I called to mind those distant ages when twenty celebrated nations inhabited the country around me. I pictured to myself the Assyrian on the banks of the Tygris, the Chaldean on those of the Euphrates, the Persian whose power extended from the Indus to the Mediterranean. I enumerated the kingdoms of Damascus and Idumea; of Jerusalem and Samaria; and the warlike states of the Philistines; and the commerical republics of Phenicia. This Syria, said I to myself, now almost depopulated, then contained a hundred flourishing cities, and abounded with towns, villages, and hamlets.*

* "This Syria contained a hundred flourishing cities." Accord

Everywhere one might have seen cultivated fields, frequented roads, and crowded habitations. Ah! what are become of those ages of abundance and of life? What are become of so many productions of the hand of man? Where are those ramparts of Nineveh, those walls of Babylon, those palaces of Persepolis, those temples of Balbec and of Jerusalem? Where are those fleets of Tyre, those dockyards of Arad, those work-shops of Sidon, and that multitude of mariners, pilots, merchants, and soldiers? Where those husbandmen, those harvests, that picture of animated nature of which the earth seemed proud? Alas! I have traversed this desolate country, I have visited the places that were the theatre of so much splendor, and I have beheld nothing but solitude and desertion! I looked for those ancient people and their works, and all I could find was a faint trace, like to what the foot of a passenger leaves on the sand. The temples are thrown down, the palaces demolished, the ports filled up, the towns destroyed, and the earth stripped of inhabitants, seems a dreary burying-place. Great God! whence proceed such melancholy revolutions? For what cause is the fortune of those countries so strikingly changed? Why are so many cities destroyed? Why is not that ancient population reproduced and perpetuated?

Thus absorbed in contemplation, new ideas continually presented themselves to my thoughts. Everything, continued I, misleads my judgment, and fills my heart with trouble and uncertainty. When these countries enjoyed what constitutes the glory and felicity of mankind, they were an *unbelieving* people who inhabited them: it was the Phenician, offering human sacrifices to Moloch, who brought together within his walls the riches of every climate; it was the Chaldean, prostrating himself before a serpent,* who subjugated opulent cities, and laid waste the palaces of kings and the temples of the gods; it was the Persian, the worshipper of fire, who collected the tributes of a hundred nations; they were the inhabitants of this very city, adorers of the sun and stars, who erected so many monuments of affluence and luxury. Numerous flocks, fertile fields, abundant harvests, everything that should have been the reward of *piety*, was in the hands of *idolaters*: and now that a *believing* and *holy* people occupy the countries, nothing is to be seen but solitude and sterility. The earth under these *blessed* hands produces only briers and wormwood. Man sows in anguish, and reaps vexation and cares; war, famine, and pestilence, assault him in turn. Yet, are not these the children of the prophets? This Christian, this Mussulman, this Jew, are they not the elect of heaven, loaded with gifts and miracles? Why then is this race, beloved of the Divinity, deprived of the favors which were formerly showered upon the heathen? Why do these lands, consecrated by the blood of the martyrs, no longer boast their former temperature and fertility; Why have those favors been banished as it were, and transferred for so many ages to other nations and different climes?

And here pursuing the course of vicissitudes which have in turn transmitted the sceptre of the world to people so various in manners and religion, from those of ancient Asia down to the more recent ones of Europe, my native country designated by this name, was awakened in my mind, and turning my eyes toward it, all my thoughts fixed upon the situation in which I had left it.*

I recollected its fields so richly cultivated, its roads so admirably executed, its towns inhabited by an immense multitude, its ships scattered over every ocean, its ports filled with the produce of either India; and comparing the activity of its commerce, the extent of its navigation, the magnificence of its buildings, the arts and industry of its inhabitants, with all that Egypt and Syria could formerly boast of a similar nature, I pleased myself with the idea that I had found in modern Europe the past splendor of Asia: but the charm of my revery was presently dissolved by the last step in the comparison. Reflecting that if the places before me had once exhibited this animated picture: who, said I to myself, can assure me that their present desolation will not one day be the lot of our own country? Who knows but that hereafter some traveller like myself will sit down upon the banks of the Seine, the Thames, or the Zuyder sea, where now, in the tumult of enjoyment, the heart and the eyes are too slow to take in the multitude of sensations; who knows but he will sit down solitary amid silent ruins, and weep a people inurned, and their greatness changed into an empty name?

The idea brought tears into my eyes; and covering my head with the flap of my garment, I gave myself up to the most gloomy meditations on human affairs. Unhappy man! said I in my grief, a blind fatality plays with thy destiny!† a fatal necessity rules by chance the lot of mortals! But no: they are the decrees of celestial justice that are accomplishing! A mysterious God exercises his incomprehensible judgments! he has doubtless pronounced a secret malediction against the earth: he has struck with a curse the present race of men, in revenge of past generations. Oh! who shall dare to fathom the depths of the Divinity?

The child, in its innocent egotism, thinks only of itself; the old man, turned inward on himself by what he has suffered, does the same. It is only in the warm and bright period of middle life that we live for others: like the sun, whose morning and evening rays pass over the objects which are illuminated by its mid-day beams.

A year of pleasure passes like a fleeting breeze; but a moment of misfortune seems an age of pain.

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ing to Josephus and Strabo, there were in Syria twelve millions of souls; and the traces that remain of culture and habitation confirm the calculation.

* The Dragon Bel.

* In the year 1782, at the close of the American war.

† This is the universal and rooted prejudice of the East. "It was written," is there the answer to everything. Hence result an unconcern and apathy, the most powerful impediments to instruction and civilization.

THEORY OF THE SIROCCO.

Few words have a more indefinite meaning, or have lately been more frequently abused and misapplied than that of sirocco, since every breath of air oppressive or offensive to a Smellfungus's feelings, must assuredly be a sirocco; and so we read of siroccos everywhere, even at Florence. Since Brydon's day the sirocco has, by the consent of every subsequent traveller, been described as a suffocating blast coming from the deserts of Arabia. But if we are to credit travellers who have experienced the samiel of the desert, the sirocco and samiel only resemble one another in some of their effects; but nowise in the identity of their nature. The samiel is described as a blast of wind first seen approaching from some point of the horizon, and, as it passes over the prone traveller, it envelops him "in a fine *impalpable dust*, which not only penetrates into every fold of his garments, but into the inmost recesses of boxes and other baggage." It is this impalpable dust which produces suffocation; and animals even, as well as men, cover their nostrils in the earth, that they may not respire it, so sensible are they of its fatal approach. "Among the places the sirocco infests, Naples, Messina, and Palermo, are those principally, and, until the word became misapplied, almost exclusively, spoken of by travellers who have treated of the subject. Agrigentum, and the whole south side of Sicily, which are directly opposite to the point whence the sirocco is said to come, are not noticed by any writer as being particularly exposed to its stifling influence, or, indeed, as being obnoxious to it at all. Is not this very singular? let me ask. Is it not, in fact, subversive of the very idea of its origin? Again; no part of the coast of Greece has ever been reputed as liable to the effects of the sirocco; and yet no rational cause can be assigned for this exemption, if it be true that it comes from the opposite coast; and, after various inquiries made of naval officers who have been stationed in the Mediterranean, and who have navigated this sea at all seasons and in all directions, I have not been able to find one who had ever experienced its effects while traversing for years the very track of its supposed course. How is it possible, let me again ask, that this could have happened, did the sirocco cross the Mediteranean from Africa?

"Its denomination of a *wind*, in the first place, is misapplied; for it must be known by every one who has felt its baneful impression, that when this state of atmosphere exists there is no wind at all. The day it prevails is overcast, sultry, and calm; look around, and you see nothing but a lurid haze, as offensive to the eye as its breath is poisonous to every other sense. "But after having endeavored, by the foregoing observations, to set aside the unfounded and mistaken notion of the nature and source of the sirocco, how otherwise, the traveller has a right to inquire, is the phenomenon to be explained? The following is the view I am inclined to take of it.

"From the fuming mouths and crevices of Vesuvius, and the pseudo-volcanic vicinity of the Pisciarelli, Solfatara, and Baiæ (*vaporiferæ Baiæ*), from Stromboli and Etna, there are constantly issuing mephitic vapors and gases, which from their heated and rarefied state, naturally ascend, and mixing with the purer circumambient air, get diluted and dispersed by every casual wind. But let us suppose not an unusual occurrence to take place, namely, that this mephitic atmosphere shall suffer a sudden diminution of its elasticity through a change of temperature taking place high up in the air, while the aqueous vapor it holds dissolved becomes in consequence more condensed; and that at the same time there shall be no wind to disperse the gaseous exhalations as they continue to arise from below; the natural effect must be, for these dense vapors to descend, and for those which are being evolved to fall again, as soon as they have cooled down to an equilibrium of temperature with the surrounding atmosphere. The necessary consequence of all which must be, for this concentrated mass of mephitic vapor to lodge, by reason of its greater specific gravity, on the surface of the earth, and thus envelop within its range and influence every being that breathes.

"Added to this state of contamination are the fresh exhalations that continue to be emitted, thus saturating the more strongly with mephitism the already infected air; and in cities where narrow winding streets and high buildings entangle these mephites, and impede their dispersion, the suffocating adulteration must of necessity be more powerfully felt. Now, the effects on the human frame which the sirocco produces are precisely those known to be caused by mephitic gases when inhaled; and when we consider the proximity of Naples to Vesuvius, and of Messina and Palermo to Stromboli and Etna, we can no longer wonder at their being sites particularly exposed to experience the sirocco, or at the immunity of other places in the same parallel, which, if it really proceeded from the African coast, would encumber the other difficulties attached to the hypotheses of a wind, which is *no* wind, with an additional paradox. In a word, the sirocco, properly so called, is nothing else, in my opinion, than volcanic mephites deposited from a humid and unstrung atmosphere, which, when inhaled into the lungs in a condensed and concentrated state produces those effects in a *poisonous* manner, which the samiel of the desert produces solely in a mechanical.

"A phenomenon familiar to all who have resided a winter in London, and precisely similar in its philosophical rationale, often occurs about November. I allude to the dense and dark fogs of London. About this time of the year the atmosphere is liable to sudden diminutions of elasticity, which, when they happen, precipitate the smoke proceeding from innumerable coal fires along with the humidity, in a way precisely analogous, as I conceive, to what takes place at Naples, Messina, &c., when the sirocco prevails; and many delicate invalids, especially the asthmatic, suffer in a way very similar to that produced by the sirocco. Coal-smoke, we know, consists principally of mephitic and sulphureous fumes.

"The exhalations given out all around Naples

are extremely irritating to the lungs, aggravating every pulmonic disease; and I am afraid the the Italian saying, "See Naples and *die*," has often been too literally verified by many an English victim, led to a premature death by the pernicious and self-interested counsel of itinerant medical practitioners. According to Dr. Ruggiero, deaths from consumption form a fifth part of the bills of mortality in Naples. This impurity of the atmosphere is even sensible to the nostrils; for the air never has that sweet, refreshing aroma which makes an English spring so grateful and fragrant."

Weatherhead's "Tour through France and Italy."

MINERALS IN THE UNITED STATES.

In the September number of the Magazine, we gave a portion of a report of a Geological Exploration of the territory of Iowa, by David Dale Owen. In addition to the valuable information relative to a particular district of our Union, contained in that report, we add the following concerning the mineral products of the United States in general, taken from a work recently published, by Dr. Lee of New York city:—

COAL.

The coal strata have been observed as far north on this continent as human discovery has yet penetrated. At Melville island, in latitude 75°, where the summer lasts but a few weeks, Captain Parry found in the coal formation an abundance of impressions and casts of plants which bore a tropical aspect; and in Spitzbergen, which is still nearer the north pole, there is also an extensive coal deposite, with the same remains of fossil vegetables.

Nova Scotia affords bituminous coal of good quality; the quantity very great, if not inexhaustible.

Rhode Island has many localities which yield large quantities of coal. Those which have been explored are situated chiefly in Portsmouth, near the northern extremity of the state.

Massachusetts.—Anthracite coal has been discovered at Worcester; vein 7 thick; operations for the present suspended. Mansfield has extensive formations of anthracite; and small quantities of bituminous coal have been found in the new red sandstone near West Springfield.

Anthracite coal-fields of Pennsylvania.—No part of the world can boast of such inexhaustible beds of anthracite as the state of Pennsylvania. To use the language of Prof. Rogers: "Embracing a territory where the upper coal-bearing rocks of the great ancient secondary basis of the continent terminate toward the east and north, the revolutions which have stripped other states of their treasures have left us in possession of some of the largest and most richly supplied coal-fields of which any country can boast. When we regard their immense extent, comprising either the whole or a part of the area of 30 counties out of the 54 in the state, and the wide range and great thickness of many of the coal seams; and when we contemplate the amazing variety in the character of the mineral itself, showing every known gradation from cannel coal to anthracite, fitting it thus for every possible adaptation in the arts or as a fuel, and then turn our attention to the geological and topographical structure of the regions, affording a ready access to their most secluded districts, we behold such a prodigality of happy circumstances as may well inspire exultation. It is estimated that the anthracite coal conveyed to market from our mines in the course of the last year (1837) has nearly amounted to 900,000 tons; yet this large quantity sinks into insignificance when we look at what the coal trade even in the next ten years is destined to become. If we turn to the southern anthracite basin, the present seat of the most extensive mining operations in the state, we behold a mass of coal measuring nearly 60 miles in length and 2 in average breadth, having in the middle an aggregate thickness of good and available coal exceeding probably 100 feet! When we consider that from this basin and its branches above 730,000 tons have been sent to market in the course of the past year from six districts only, and when we reflect that nearly all this coal has been taken from the strata above the water-level, below which hundreds, nay, thousands of feet of coal, following the dip of the same, lie still untouched, we are made aware of the enormous amount of undeveloped resources in this coal region."

The bituminous coal-fields of Pennsylvania.—Great and valuable as are the anthracite deposites of Pennsylvania, her bituminous coal region is still more extensive and inexhaustible. We have already stated that the great secondary deposite, which extend from the Hudson to the Mississippi, and probably to the Rocky mountains, is in Pennsylvania limited by the Allegany mountains, which appear to form the barrier or dividing line between the anthracite and bituminous coal-beds, or between the secondary and transition formations. The union or junction of these formations is distinctly marked in the end of the mountain where the west branch of the Susquehannah breaks through it, above Bald Eagle, the latter resting against the former, and forming the basin in which the bituminous coal, in regular and successive strata, is deposited.

The coal-field, then, which is bounded on the south and east by the Allegany mountains, extends into Virginia and westward, so that bituminous coal abounds to a greater or less extent in all the western counties of Pennsylvania, with the exception of Erie, in which it has not been discovered. The counties of Bradford, Lycoming, Tioga, Potter, McKean, Warren, Crawford, Bedford, Huntingdon, and Centre, lie partly in and partly out of the coal-field. The counties of Allegany, Armstrong, Beaver, Butler, Cambria, Clearfield, Fayette, Greene, Indiana, Jefferson, Mercer, Somerset, Venango, Washington, and Westmoreland, are wholly within its range, and embrace together an area of 21,000 *square miles*,

or 13,440,000 acres, while the anthracite coal districts have been computed to contain but 624,000 acres.*

Its great abundance and cheapness have indeed given birth to the vast and widely-extended manufacturing establishments of the west. Without coal they could not exist. It thus constitutes the life-spring of western Pennsylvania, and the pedestal of her great manufacturing emporium, Pittsburgh. This city alone and its environs, in 1835, contained 120 steam-engines for the various manufactures of iron, steel, glass, cotton, salt, brass, white lead, flour, oil, leather, &c. These engines consume annually nearly 3,000,000 bushels of coal.

The coal consumed for every purpose in and about Pittsburgh has been estimated at 7,665,000 bushels, or 255,500 tuns. At four cents a bushel, the price now paid in Pittsburgh, it would amount to $306,512. Beside this, great quantities are shipped to Cincinnati, New Orleans, and the intermediate places, where it is sold for from five to ten dollars a tun. Large quantities of it are also consumed in the western counties of Pennsylvania in the manufacture of salt, as there are more than 100 salt manufacturing establishments in that region, and many others going into operation, which produce annually more than 1,000,000 bushels of salt, and consume 5,000,000 bushels of coal. The total amount of anthracite and bituminous coal at present derived from the coal beds of Pennsylvania cannot fall much short 2,000,000† tuns annually; being about one twelfth as much as the total annual product of all the coal-fields of Great Britain, nearly half as great as that of all the rest of Europe, and about equal to that of France.

Coal-fields of Maryland.—These are bituminous, and, so far as discovered, two in number, viz, the Cumberland field, extending from Will's creek to the head branch of the Potomac, being about 60 miles in length by from 5 to 7 in width, covering an area of 400 sq. miles; the coal existing in beds of from three to fifteen feet thick, of an excellent quality, burning easily, with a bright and durable flame, caking, and leaving little residue. The other, called the Youghiogeny field, lies west of the Allegany ridge, is of unknown extent, and has beds of coal 20 feet in thickness.

Virginia abounds in both anthracite and bituminous coals. It is a remarkable fact, that nearly all the coal-beds of this country, like those of England, are associated with iron ore, as if on purpose for its reduction.

Besides coal and iron, Virginia contains gold, copper, lead, salt, limestone, marls, gypsum, magnesian, copperas, and alum earths; thermal, chalybeate, and sulphuretted springs; excellent marbles, granites, soapstones, sandstones, &c.

Ohio.—Were we to state that the whole of the south and eastern part of the state of Ohio was one magnificent coal-field, we believe we should not vary far from the truth.

Kentucky.—About a mile from the Cumberland river, in Adair county in boring for salt water, a bed of coal 45 feet thick was struck thirty feet below the surface, and at 150 feet beneath the coal a vein of salt water was reached, into which the auger dropped, and immense quantities of gas were discharged for a number of days. Indeed, coal and salt water may be said to abound from the heads of the Cumberland river to the heads of the Licking, occupying the whole of the northern and eastern borders of the state of Kentucky. West of this line iron ore is abundant.

Tennessee.—The coal of Tennessee is generally bituminous and of an excellent quality, burning freely, with much smoke and a white bright flame, furnishing a good coke, and containing about seventy per cent. of carbon.

Other coal-fields of the United States.—We have thus briefly described the most important coal-fields of our country which have as yet been explored: there are known to exist numerous others, which at no distant day will probably rise to an equal degree of importance. Such are those of Illinois, Alabama, Mississippi, and Indiana, some of which are already worked to a considerable extent, especially on the Wabash. We have, however, stated enough to satisfy the reader that nature has been most lavish in her distribution of this valuable mineral over the surface of our country, and in those very places, too, where it would seem to be most needed; and that no country on the globe can boast an equal amount of coal deposites with the United States of America.

IRON

is found in several states, in great abundance, and of good quality. Maine, New Hampshire, Connecticut, New York, New Jersey, Pennsylvania, and Ohio, have extensive formations, and in inexhaustible quantities.

Iron Ore in Maine.—In the state of Maine the ores of iron are valuable and abundant; and at Woodstock, in the northern part of the state, bordering on the British provinces, there is one of the most extensive veins of this metal ever discovered. Dr. Jackson states that it is nearly 900 feet wide, and runs through an unknown extent of country. The ore is the compact red hematite, and yields 44 per cent. of pure metallic iron, and 50 per cent. of cast iron. By a simple calculation, it can be shown that, as a cubic foot of the ore weighs 200 lbs. if the bed were wrought to the depth of 100 feet, and 500 feet in length, it would yield 45,000,000 cubic feet of ore. A vein of magnetic iron ore exists on Marshall's island, about three feet wide; and on the Aroostook river is a bed of red hematic iron of the best quality, 36 feet wide, and of immense and unknown length.

Iron ore of New York.—The state of New York also furnishes an abundance of this useful metal. In Columbia and Dutchess counties the mines are numerous and easily worked, and free

* Packer's Report to the Senate of Pennsylvania, March 4th, 1834.

† The *coking process* is now understood in Pennsylvania, and it is found that the bituminous coal is quite as susceptible of this operation, and produces as good coke as that of Great Britain. Indeed, it is now used to considerable extent in some of her iron manufactures.

from water. These beds yield annually about 20,000 tuns of ore, which is worth at the spot from $1.50 to $2.50 per tun. Within twelve miles of Amenia there are ten furnaces, which make 10,000 tuns of iron per annum, and afford employment to 1,000 men. There are several other furnaces in Columbia and Dutchess counties; and the aggregate value of the pig iron made at them all is estimated at $500,000 per annum. Much of this iron, especially that made from the bed in Amenia, which yields 5,000 tuns of ore per annum, is said to equal that from Salisbury. Much of the ore in these counties lies in a tertiary formation, under a deposite of pebbles, gravel, and loam, and frequently, as at Amenia, at the junction of talcose slate and limestone.

Some idea may be formed of the immense quantity of iron in this region, when we state that at Newcomb, a few miles from the Hudson river, a bed has been traced more than a mile in length, and 300 feet in width; and about a mile north is another bed, 500 feet wide, which extends nearly a mile, and of an unknown depth.

In 1810, the quantity of bar iron made in the United States was 29,000 tuns; in 1830, 112,860 tuns, and also 191,536 tuns of pig iron, of the value of $13,329,760. In 1810, the total value of our iron manufactures was estimated at $14,364,526. At present it exceeds probably $50,000,000, as there is not only a vast increase in the amount of the articles produced, but many new branches of manufacture have been introduced within the last few years.

GOLD.

The gold region of the United States may properly be said to extend from the Rappahannock, in Virginia, to the Coosa in Alabama. Gold has, however, been found in Lower Canada, Vermont, Massachusetts, New York, New Jersey, Pennsylvania, and Maryland, and it is therefore supposed by some that the gold deposites follow the primitive formation from Canada to the gulf of Mexico. At Somerset, in Vermont, Professor Hitchcock thinks there is every indication of a gold region, and that it probably extends south into Massachusetts, as it has been discovered at Deerfield.

The richest gold mines in the United States are those of Virginia, North Carolina, and Georgia.

A full account of the mineral riches of the United States would fill many volumes; of those which remain undescribed, we can briefly notice but a few.

LEAD.

Lead is found in numerous places in the United States, but in few, however, in quantities sufficient to render its working profitable. It has been worked at Southampton and near Middletown (Connecticut), also in several places in Dutchess county (New York), and at the Perkiomen mine in Pennsylvania. The most valuable locality of this mineral in the state of New York is at Rossie, St. Lawrence county, where a vein two feet wide penetrates a ledge of rocks fifty feet high, and extends to an unknown depth.

One of the most extensive deposites of lead on the globe exists in what is called the mineral district of Missouri, which comprises parts of the counties of Washington, St. Genevieve, Jefferson, St. Francis, and Madison; extending a distance of about 70 miles in length, and from the Mississippi, in a southwesterly direction, about 50 miles in breadth. Beside a great abundance of lead, this region contains also iron, manganese, zinc, antimony, arsenic, plumbago, &c. The lead ore is the galena or sulphuret of lead. It is found in loose detached masses in the soil, and not in veins, in rocks, as it usually occurs, and yields about 70 per cent. pure lead, and an annual product of several millions of pounds.

The total amount of lead from the United States lead-mines in Missouri, from 1825 to 1832, was 5,151,252 lbs.; and from 1821 to 1836, the product of the lead mines of Fever river amounted to 70,420,357 lbs.; giving a total from both these sources of 75,571,609 lbs.

COPPER.

Copper is found in many places in this country, in connexion with lead and zinc, as at the Perkiomen lead-mine (Pennsylvania); Schuyler's mines (New Jersey), Cheshire and Wethersfield (Connecticut), Singsing (New York), &c.; but, as the quantity is too small to be worked in many places to advantage, we pass it by. The same remarks will also apply to silver ore, a small quantity of which is contained in nearly all our lead ores.*

MANGANESE

occurs frequently in the form of an earthy oxyde, resembling bog-iron ore, and is employed extensively in furnishing oxymuriatic acid for bleaching, communicating a violet or purple color to glass, in painting porcelain, and furnishing oxygen gas. It has not heretofore been in great demand, but there is no doubt it exists in quantity sufficient to supply the wants of the country.

PEAT.

Owing to the abundance of other kinds of fuel, peat has not yet been brought into extensive use, although it exists in inexhaustible quantities in many parts of the United States. Peat is derived from the vegetable fibres of partially decayed plants, or from decayed wood, which is called *ligneous* peat, though this is inferior to the other. The best peat lies at a depth of three or four feet, and frequently contains the trunks and branches of cedar and other durable kinds of wood, which have undergone little change. Though peat abounds in cold and wet regions, it is rarely found in warm climates, because vegetable decomposition is there too rapid to allow of the preservation of organic matter.

* There are indications of a rich deposite of copper near Rossie, St. Lawrence county, New York.

It is unnecessary to mention localities where this substance is found. Professor Hitchcock estimates, that in the eastern part of Massachusetts 80,000 acres, or 125 square miles, are covered with it, being an average thickness of six feet four inches. This would yield at least 121,000,000 of cords. Professor Mather remarks, that "peat is so common in every part of the first geological district (of New York, embracing the southern part) that it may be found on almost every square mile. The value of peat-grounds is not yet fully appreciated; but when this combustible shall come into use, as it soon will, owners of those peat-lands which are convenient to a market must realize a large amount; and it should be remembered that these grounds, when dug once, are not exhausted, like a coal-mine, but in a few years, if properly managed, will be renovated, and afford a new supply. A peat meadow, with a thickness of only three feet, will give more than 1,000 cords per acre. This combustible may be furnished at so low a rate that the poor may have an abundance of fuel. The odor of peat is unpleasant to some persons, but not more so than that of bituminous coal. Peat is usually cut out in pieces like bricks, by a kind of spade with a raised edge on one side, and is then dried like unbaked bricks, and afterward stacked or housed for use."

Every swamp contains either peat or a vast amount of vegetable matter which may be usefully employed in agriculture. It may also be employed for producing gas-light, as in France. Peat is often used for manure, after rotting it with lime in the barn-yard or compost heap. Peat is not confined to fresh-water lakes and marshes, but also abounds in those which are salt. Mather estimates that the first geological district of New York contains at least 3,000,000 cords of peat, some of which has as great a specific gravity as bituminous coal, and is nearly or quite as valuable for fuel.

"Perhaps it would be saying too much," says Prof. Emmons, "to assert that peat is more valuable than coal; but when we consider that it contains a gaseous matter equal in illuminating power to oil or coal-gas, that its production is equally cheap, and, in addition to this, that it is a valuable manure if properly prepared, its real and intrinsic worth cannot fall far short of the poorer kinds of coal. There is one consideration which commends itself to the philanthropic of all large cities, viz, the introduction of peat as a fuel to supply the necessities of the poor. It is believed that much suffering may be prevented, and much comfort promoted, by the use of peat in all places where fuel is expensive, as in New-York and Albany."

CAPT. ERICSSON'S STEAM FIRE-ENGINE.

The alarming frequency and extent of conflagrations in the city of New York, during the winter of 1839-'40, caused the attention of the citizens generally, and of the different insurance companies in particular, to be turned to the subject of adopting more efficient means for extinguishing fires, than the city possessed. The untiring efforts of the well-organized and efficient fire department, seemed insufficient to perform the arduous duties required of them, and general alarm pervaded the community. At this juncture, the Mechanic's Institute of that city very opportunely directed its efforts for the promotion of the public good, by offering the gold medal of the Institute—the highest honor within its gift—as a reward for the best method of applying steam to the fire-engine. Several plans were submitted, and, after a thorough and patient investigation of their several merits, by the Committee on Arts and Sciences, of the Institute, the token of excellence was awarded to Captain J. Ericsson, one of the most celebrated of European engineers, who is now on a visit to this country. Of this engine, the committee in their printed report remark:—

The points of excellence as thus narrowed down were found to belong in a superior degree to an engine weighing less than $2\frac{1}{4}$ tuns, that with the lowest estimated speed has a power of 108 men, and will throw 3,000 lbs. of water per minute to a height of 105 feet, through a nozzle of $1\frac{1}{2}$ inches diameter. By increasing the speed to the greatest limit easily and safely attainable, the quantity of water thrown may be much augmented.

In the American Repertory of Arts for October, the report of the committee appears at length, from which we copy the following detailed description of the engine:—

DESCRIPTION OF THE DRAWING.

Figure 1—Represents a longitudinal section of the boiler, steam-engine, pump, air-vessel, and blowing apparatus, through the centre line.

Figure 2—Side view of the steam fire-engine complete.

Figure 3—Plan or top view of the engine: air-vessel, slide-box of steam-cylinder and induction-pipe supposed to be removed.

Figure 4—Transverse section of the boiler, through the furnace and steam-chamber.

Figure 5—Lever or handle for working the blowing apparatus by manual labor.

Similar letters of reference will be used to denote similar parts in all of the figures.

A.—Double acting force-pump, cast of gun-metal, firmly secured to the carriage frame by four strong brackets cast.—*a*, *a*. Suction-valves.—*a′*, *a′*. Suction passages leading to the cylinder.—*a″*. Chamber containing the suction-valves, and to which chamber are connected *a‴*, *a‴*. Suction pipes to which the hose is attached by screws in the usual manner, and which may be closed by the ordinary screw cap. The delivering valves and passages at the top of the cylinder are similar

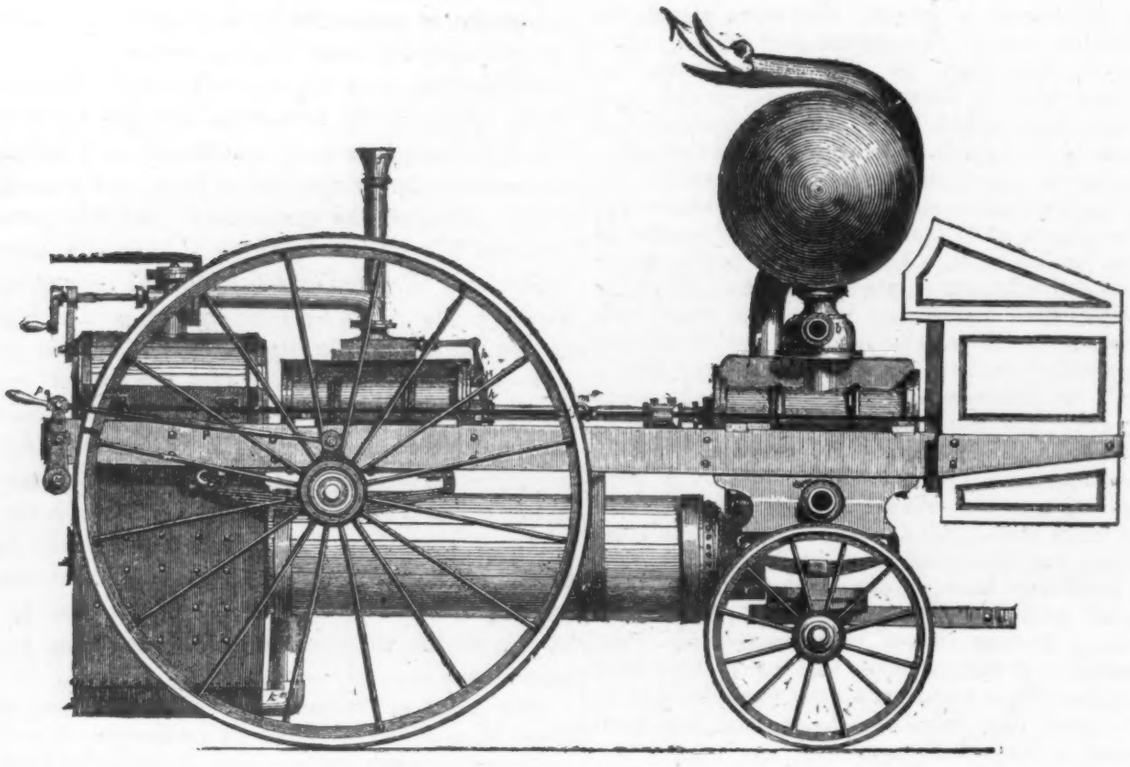


Figure 2. Captain Ericsson's Steam Fire-Engine.

to those just described, but the valve-chamber communicates directly with

B.—Air-vessel of a globular form, made of copper.—*b*, *b*. Delivery pipes to which the pressure hose is attached: when only one jet is required, the opposite pipe may be closed by a screw-cap, as usual. The piston or bucket of the force-pump to be provided with double leather packing; the piston-rod to be made of copper; the gland and stuffing box to be made of brass.

C.—Boiler, constructed on the principle of the ordinary "locomotive boiler," and containing 27 tubes of $1\frac{1}{2}$ inch diameter. The top of the steam-chamber and the horizontal part of the boiler to be covered with wood, to prevent the radiation of heat.—*c*. Fire-door.—*c′*. Ash-pan, consisting of a square box attached below the furnace, and having a small door in front.—*c″*. Square box attached to the end of the boiler, enclosing the exit of the tubes. The hot air from the tubes received by this box is passed off through—*c‴*. Smoke pipe, carried up through either of the spaces D, making a half-spiral turn round the air-vessel, and terminating in the form of a serpent or a dragon, to avoid the unsightly appearance of an abrupt vertical termination.—c^4. Brackets of wrought iron, riveted to the upright part of the boiler, and bolted to the carriage frame.—c^5. Wrought iron stay, also bolted to the carriage frame, for supporting the horizontal part of the boiler.

E.—Cylindrical box attached to the top of the steam-chamber, containing:—*e*. Conical steam-valve, and also—*e′*. Safety-valve.—*e″*. Screw with handle connected to the steam valve, for admitting or shutting off the steam.—*e‴*. Induction-pipe, for conveying the steam to

F.—Steam-cylinder, provided with steam passages and slide-valve, of the usual construction, and secured to the carriage frame in similar manner to the force-pump.—*f*. Eduction-pipe, for carrying off the steam into the atmosphere.—*f′*. Piston, provided with metallic packing (on Barton's plan).—*f″*. Piston-rod of steel, attached to the piston-rod of the force-pump by means of

G.—Crosshead of wrought iron, into which both piston-rods are inserted and secured by keys.—*g*. Tappet-rod attached to the crosshead, for moving the slide-valve of the steam-cylinder by means of—*g′*, *g′*, Nuts which may be placed at any position on the tappet-rod.

H.—Spindle of wrought iron, working in two bearings attached to the cover of the steam-cylinder, the one end thereof having fixed to it—*h*. Lever, moved or struck ultimately by the nuts *g′*, *g′*.—*h′*. Lever, fixed to the middle part of the spindle H, for moving the steam-valve rod.

I.—Force-pump for supplying the boiler, constructed with spindle-valves on the ordinary plan; the suction-pipe thereof to communicate with the valve-chamber of the water-cylinder, and the delivering-pipe to be connected to the horizontal part of the boiler.—*i*. Plunger of force-pump, to be made of gunmetal or copper, and attached to the crosshead G.

J.—Blowing-apparatus, consisting of a square wooden box, with panelled sides, in which is made to work—*j*. Square piston, made of wood, joined to the sides of said box by leather.—*j′*. Circular holes or openings through the sides, for admitting atmospheric air into the box; these holes being covered on the inside by pieces of leather or India-rubber cloth to act as valves.—*j″*. Are similar holes through the top of the box,

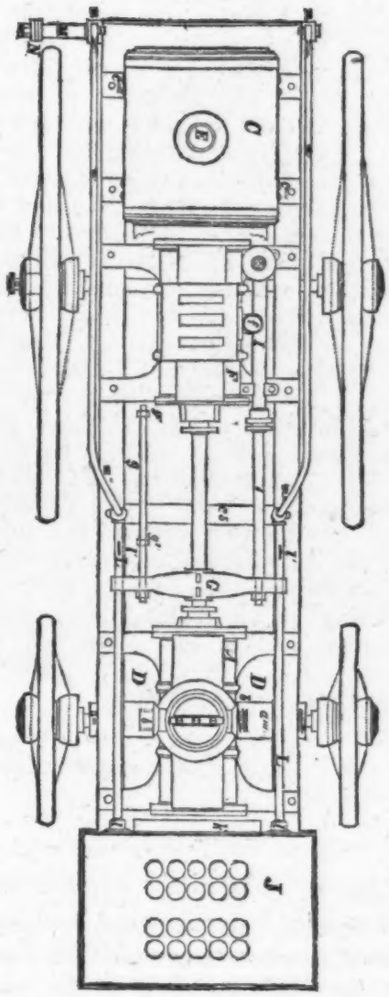


Figure 3

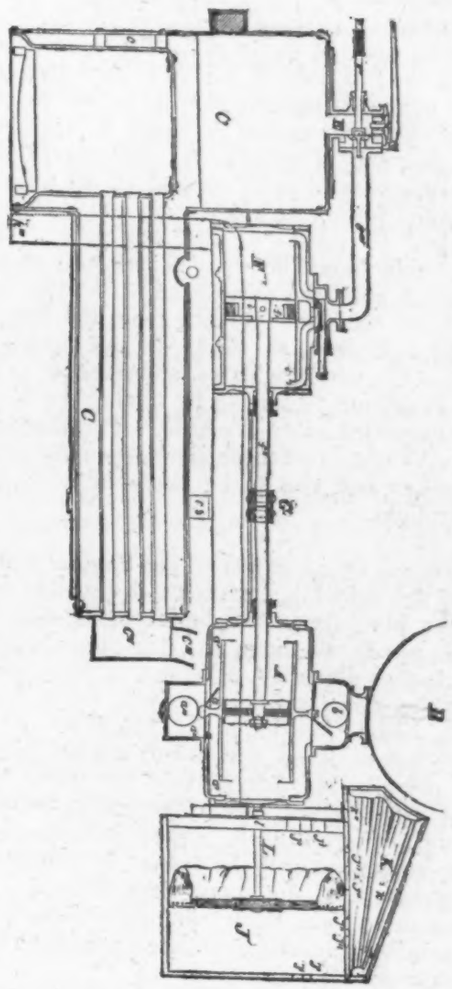


Figure 1.

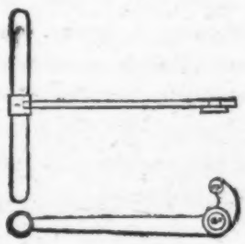


Figure 5.

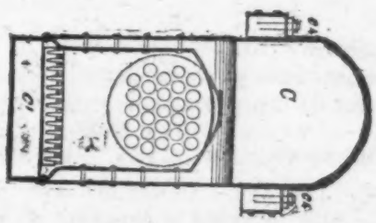


Figure 4.

for passing off the air at each stroke of the piston, into

K.—Receiver or regulator, which has—*k*. Moveable top, made of wood, joined by leather to the upper part of the box; a thin sheet of lead to be attached thereto, for keeping up a certain compression of air in the regulator.—*k*. Box or passage made of sheet iron, attached to the blowing apparatus, and having an open communication with the regulator at *k''*; to this passage is connected a conducting pipe, as marked by dotted lines in figure 1, for conveying the air from the receiver into the ash-pan under the furnace of the boiler, at *k'''*; this conducting pipe passes along the inside of the carriage frame, on either side.

L, L.—Two parallel iron rods, to which the piston of the blowing apparatus is attached: these rods work through guide-brasses *l*, *l*, and they may be attached to the crosshead G, by keys at *l'*, *l'*. The holes at the ends of the crossheads for admitting these rods, are sufficiently large to allow a free movement whenever it is desirable to work the blowing apparatus independently of the engine.

M.—Spindle of wrought iron, placed transversely, and working in two bearings fixed under the carriage frame: to this spindle are fixed—*m*, *m*, two crank-levers, which by means of—*m'*, *m'*, two connecting rods, will give motion to the piston-rods L, L, by inserting the hooks *m''*, *m''*, into the eyes at the ends of the said piston-rods.

N.—Crank-lever, fixed at the end of spindle M, which by means of

O—Crank-pin, fixed in the carriage-wheel, and also

P—Connecting rod, will communicate motion to the blowing apparatus, whenever the carriage is in motion, and the above parts duly connected.

n.—Pin fixed in lever N, placed at such distance from the centre of spindle M, that it will fit the hole *n'* of the lever shown in figure 5, while *n''* receives the end of spindle M. Whenever the blowing apparatus is to be worked by the engine or by manual force, the connecting rod P should be detached by means of the lock at *p*. The carriage frame should be made of oak, and plated with iron all over the outside and top; the top plate to have small recesses, to meet the brackets of the cylinders, as shown in the drawing. The lock of the carriage, axles, and springs, to be made as usual, only differing by having the large springs suspended *below* the axle. The carriage wheels to be constructed on the suspension principle; spokes and rim to be made of wrought iron, very light.

With regard to the power of the engine represented by the drawing, I estimate it equal to 108 men. The pressure in the boiler being kept at 65 pounds per square inch, and the steam-piston being 10 inches diameter, its effective force, considering the *direct* application, will be at least 4,000 lbs. which, multiplied by 135 feet (or 45 double 18-inch strokes), will be 540,000 lbs. raised one foot per minute; this, divided by 5,000 (the power of man), gives 108. The piston of the force-pump being only 9 inches in diameter, while the steam-piston is 10 inches in diameter, and the pressure of the steam kept at 65 lbs. to the square inch, I can state from experience that in calm weather the water will be projected 110 feet perpendicularly.

The size of the jet will be determined by the following calculation: *Effective* pressure on steam-piston=50 lbs. per square inch; proportion of pistons as 81 to 100, hence $\frac{50\times100}{81}=61$ lbs. per square inch pressure in the air-vessel. The weight of one cubic foot of water being 62.5 lbs. it will be seen that 61 lbs. pressure is equal to 142 feet column of water; for $\frac{61\times1728}{62.5}=1713$, which divided by 12=142. Under ordinary circumstances this will produce a pressure at the exit of the jet equal to 130 feet column; hence, it will issue at the rate of $\sqrt{130}\times5.3=60$ feet per second, or 3,600 feet per minute. Deducting the loss of water by the valves, &c., the *effective* area of the piston of the force-pump will be 50 square inches; this multiplied by 135 will be 6,750; and thus the jet will be $1\frac{31}{36}$ square inch, or full $1\frac{1}{2}$ inch diameter, in order to throw the greatest quantity of water to the maximum height. For less heights the jet will increase in the inverse ratio of the square roots of the respective elevations.

The experience which I have had in the management of steam fire-engines induces me to suggest, before I conclude, that the best way of keeping the engine always in readiness, is that of having a small boiler or hot-water stove erected in the place where the engine is kept, and by means of a connecting pipe, with a screw joint, keep up heat in the engine-boiler; the fire grate or flues of which should be kept very clean, with dry shavings, wood, and coke, carefully laid in the furnace, ready for ignition: a torch should always be at hand to ignite with at a moment's notice. The plan of keeping up a *constant* fire in the engine-boiler is bad in practice, as it prevents the keeping the flues clean, and causes formation of sediment in the boiler, to say nothing of wear and tear; but which is still more important, perhaps, at the very moment of the word of fire being given, the furnace is covered with clinkers, or the engineer is busy cleaning it.

The principal object of a steam fire-engine being that of not depending on the power or diligence of a large number of men, one or two horses should always be kept in an adjoining stable for its transportation. To this fire-engine establishment the word of fire should be given, without intermediate orders: the horses being put to, the rod attached connecting the carriage-wheel to the bellows, and the fuel ignited, the engine may on all ordinary occasions be at its destination, and in full operation, within ten minutes.

J. ERICSSON.

New York, *July* 1, 1840.

REMINISCENCES.

A work of considerable interest has lately appeared entitled "Reminiscences of the last sixty-five years" in which the writer, E. S. Thomas, Esq., one of the oldest members of the editorial fraternity in this country, records his personal recollections of the men and events to which he alluded. From among a great many similar notices of the distinguished men who occupy a conspicuous place in the history of our country for the last half century, we copy the following concerning two of the earliest and most devoted patriots of the Revolution:—

JOHN HANCOCK.

"The memory of this great patriot, statesman, and orator, has been most grossly neglected. While hundreds, whose services in the cause of of independence were not a tythe of his, have been eulogized to the skies, and live on canvass, and in marble, this great patriot's name but seldom finds a place even when celebrating that freedom he was among the very first, if not *the* first, to risk his life in obtaining. I have for years noticed this neglect, with feelings of unfeigned regret.

"Never was a man more beloved by any people, than Hancock was by the people of Massachusetts. With the exception of a single year, Bowdoin was *put* in, he was for sixteen successive years, elected their governor, and closed his patriotic and illustrious life in that high station. Hundreds of times have I seen him, when so worn

out, and crippled by disease, that he could not stand, taken from his carriage into the arms of two faithful servants (who regularly attended for the purpose), and carried up to the council-chamber, a distance of nearly fifty yards from the street. The last time he addressed his fellow-citizens was the most impressive scene I ever witnessed. A town-meeting was called, upon a question of great excitement. Old Faneuil Hall could not contain the people, and an adjournment took place to the Old South meeting-house. Hancock was brought in, and carried up into the front gallery, where the Hon. Benjamin Austin supported him on the right, and the celebrated Dr. Charles Jarvis upon the left, while he addressed the multitude. The governor commenced by stating to his fellow-citizens, that '*he felt*,' it was the last time he should ever address them—that '*the seeds of mortality were growing fast within him.*" The fall of a pin might have been heard, such a death-like silence pervaded the listening crowd, during the whole of his animated and soul-stirring speech, while tears ran down the cheeks of thousands.

"The meeting ended, he was conveyed to his carriage, and taken home, but never again appeared in public—his death soon followed after. The corpse was embowelled, and kept for eight days, to give an opportunity to the citizens, from the most distant parts of the state, to render the last tribute of respect to his memory. They came by thousands and tens of thousands—the procession was an hour and a half in passing. The post of honor, among the military was given to the Concord Light Infantry, under Captain *Davis*, the same who commanded them on the ever-memorable *nineteenth of April*, '75. It was the most solemn and interesting, and incomparably the longest funeral procession I ever saw. Samuel Adams, who was lieutenant-governor, became governor, *ex-officio*, by the death of Hancock, and followed the bier (there were no hearses, with nodding plumes, in those days), as chief-mourner, but the venerable patriot could not endure the fatigue, and was compelled to retire from the procession.

"Hancock, as an orator, had no equal. He seized upon the passions of his hearers, and led them captive at his pleasure; none could resist. A gentleman who heard him deliver his great oration, commemorative of the massacre of the fifth of March seventeen hundred and seventy, told me that the multitude who listened to it were wrought up to such a pitch of phrensy, that a single sentence from the orator, calling upon them to take arms, and drive the murderers from their town, would have been at once carried into effect. Such was his control over them, many could not keep their seats, from indignation. I read this oration in my youth; it abounds

'In thoughts that breathe, and words that burn.'

It made my young blood run coursing through my veins, and the hair on my head to stand erect, as I read it. I said to myself, with the old Roman, 'If such is the effect from reading, what would it have been to have heard him deliver it?' His form was elegant; his face beautiful, manly, and expressive; his eye piercing; his voice flexible. He could raise his hearers to the highest pitch of phrensy, or sooth them into tears, at pleasure.

"It was THIS ORATION which first prepared the minds of men to resist the oppression of the British government. From the day it was delivered, it was the determination of thousands, that at the first opportunity afforded them they would burst the bands that bound them, and abide the consequences. Four years after, the opportunity was presented, at Lexington, and our nation's Independence was the result.

"Hancock, before the Revolution, was a man of vast fortune; and although he permitted it to flow, in the cause of his country, like water, he had still enough left to support a splendid establishment, and to live and entertain like a prince. His generosity was unbounded. I well remember that one evening in each week, during summer, a full band of music, at his own expense, attended in front of his venerable stone mansion, at the head of the Common, to entertain the citizens who were promenading on the Mall. He seldom left Boston to visit at any distance; but when he did, he was always escorted by a volunteer troop of cavalry, who held themselves in readiness for that purpose. He was very fond of joke and repartee, so much so, that a worthy citizen of Boston, Nathaniel Balch, Esq., a hatter, who never failed to appear among the invited guests at his hospitable board, obtained the unenvied appellation of '*the Governor's Jester.*' The celebrated Brissot, in his travels in the United States, speaks of his meeting this gentleman at Hancock's table; and such was the mutual attachment between the governor and Mr. Balch, that if the former was called away, no matter what distance, 'Squire Balch attended him, like his shadow, which the following circumstance most happily illustrates. Governor Hancock was called on to visit the then province of Maine, on which occasion he travelled in state, and was attended by the Hon. Col. Orne, one of the executive council, and Nathaniel Balch, Esq. Their arrival at Portsmouth, New Hampshire, was thus humorously announced: '*On Tuesday last, arrived in this town, Nathaniel Balch, Esq., accompanied by his Excellency, John Hancock, and the Hon. Azor Orne, Esq.*' "

SAMUEL ADAMS.

"I have taken for my subject on this occasion, recollections of SAMUEL ADAMS, who, though not '*a hero without example*,' was '*a patriot without reproach.*' In speaking of circumstances so long passed, I shall speak only of what I *know*; never having read the 'Biography of the Signers of the Declaration of Independence,' I know not what account may there be given of any of them. I never saw Mr. Adams until the year 1792; he was then far in the vale of years, with a constitution which was, judging from his appearance, naturally strong, but then nearly worn out, not with toil, but care. He still continued to use all the exercise his strength would admit, by visiting, almost daily, a Mr. Hughes, a constable, a re-

spectable calling in Boston in those days, whatever it may be now. They had been friends from early life, and the same intimacy was common between their respective ladies. Mr. Adams was then lieutenant-governor, a place of honor, with but little profit, and no duty at all except in case of the death of the governor, when *ex-officio*, the duties of the executive devolved upon the lieutenant. Mr. Adams lived in a large old-fashioned frame-house, on Winter street, which had once been painted yellow, but like its venerable owner, was a good deal the worse for wear. He entertained little or no company, having neither the means nor the inclination to do it. He was poor.

"On the death of Governor Hancock, he walked as chief mourner, preceded only by the Hancock piece of artillery. (It is proper here to remark, that the first cannon taken from the British in the war of the Revolution, were two brass four-pounders; on one was engraven, by order of the state, the name of John Hancock, and the other, Samuel Adams, with appropriate devices.) Before the almost interminable procession had reached State-street, Mr. Adams strength failed him, and he retired. He had then become *ex-officio* governor of the state, and at the next election was confirmed in his high office by the votes of the people. The then salary of the governor of Massachusetts, if my memory serves, was a thousand pounds currency, or $3,333—but a very small sum toward enabling the incumbent of the gubernatorial chair, to follow the example, in style and hospitality, set by Hancock, who lived and entertained like a prince. Mr. Adams possessed neither carriage nor horses; but he had been elected governor but a few weeks, when some gentlemen of Boston presented the venerable patriot with a new and handsome chariot, and a pair of as fine horses as there were in the city. The first use he made of his new equipage, shows the man in a point of view too rare not to be admired; seating himself beside his his venerable lady, they drove to Constable Hughs', where the governor alighted, and handing Mrs Hughs into his seat, the two old ladies drove off together, while he stayed and talked with his old friend, and I stood by devouring their discourse.

"In 1793, theatrical entertainments were first introduced into Boston after the Revolution. There was an express law against them. Application was made to the legislature to repeal the law, and it passed both houses; but Mr. Adams was then governor and refused to sign it; and we doubt whether it has ever been repealed to this day.

"It is recorded of Mr. Adams, that a large sum was offered him by-agents of the British government, to take sides with it against his native land, but it was indignation spurned, and on a subsequent occasion, when a similar circumstance was alluded to, he exclaimed, '*They well know that a guinea never glistened in my eyes.*' It was well for our country, and for mankind, that there were such men, in whose eyes guineas did not glisten; they appear to have been raised up for the occasion, and having accomplished the great work given them to do, have disappeared from the face of the earth, and there have arisen in their stead, a race of men so unlike them, that it seems scarcely possible they can be descendants of such sires. The contrast is striking, and well calculated to make us tremble for the future."

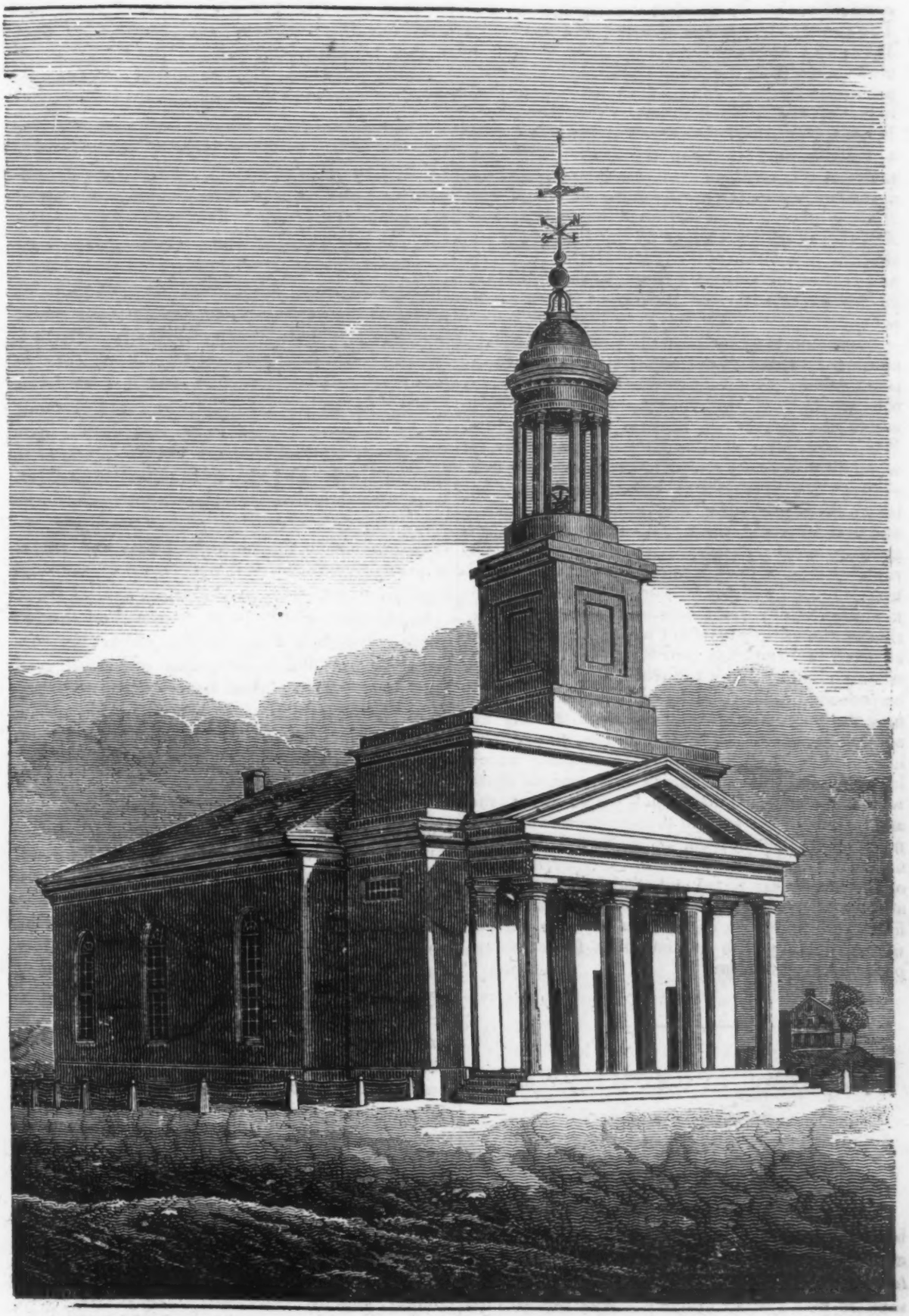
THE SILKWORM'S WILL.—Miss H. F. Gould.

On a plain rush hurdle a silkworm lay,
When a proud young princess came that way:
The haughty child of a human king
Threw a sidelong glance at the humble thing,
From the mulberry-leaf her simple food,
And shrunk, half scorn and half disgust,
Away from her sister-child of the dust,
Declaring she never yet could see,
Why a reptile form like this should be;
And that she was not made with nerves so firm,
As calmly to stand by a "crawling worm!"

With mute forbearance the silkworm took
The taunting words and the spurning look.
Alike a stranger to self and pride,
She'd no disquiet from aught beside;
And lived of a meekness and peace possessed,
Which these debar from the human breast.
She only wished, for the harsh abuse,
To find some way to become of use
To the haughty daughter of lordly man;
And thus did she lay a noble plan
To teach her wisdom, and make it plain
That the humble worm was not made in vain;
A plan so generous, deep, and high,
That, to carry it out, she must even die!
"No more," said she, "will I drink or eat!
I'll spin and weave me a winding sheet,
To wrap me up from the sun's clear light,
And hide my form from her wounded sight.
In secret then, till my end draws nigh,
I'll toil for her; and when I die,
I'll leave behind, as a farewell boon
To the proud young princess, my whole cocoon,
To be reeled and wove to a shining lace,
And hung in a veil o'er her scornful face;
And when she can calmly draw her breath
Through the very threads that have caused my death;
When she finds, at length, she has nerves so firm,
As to wear the shroud of a crawling worm,
May she bear in mind, that she walks with pride
In the winding-sheet where the silkworm died!"

Some people get along by feigning a great dislike to public employment. To hear them, you would suppose they were all making enormous sacrifices in consenting to pocket good fat salaries; and when they are at the top of the ladder, they pull out their pocket handkerchiefs, and cry, with deep feeling, "What a dog's life! but I shall be rewarded in another world."

Most women are forced to graft their virtues (I mean, at least, such as are godlike rather than saintly, truth, constancy, secrecy) on some beloved being, as husband or children, before they will bear fruit. Take away love, and it is like taking away the grass—there is no blossom; and many a saint would have been a sinner if she had no husband or children. Jean Paul.



Adams Temple, in Quincy, Mass.

ADAMS TEMPLE, IN QUINCY, MASSACHUSETTS.

This house of public worship, for the congregational society in Quincy, was erected in 1827. The former church was of wood, and was built in 1732; and afterward enlarged. It is built of stone taken from the granite quarries in that town, presented by Hon. John Adams, some time President of the United States. The Rev. Peter Whitney, pastor of the church in that place, made a suitable address when the corner-stone was laid. A plate with an appropriate inscription was deposited under the corner-stone in a lead box. Among other facts, it mentions that John Quincy Adams was then President of the United States; that the population of the town was two thousand, and that of the United States thirteen millions. In his address on the occasion, Mr. Whitney said:—

"In conformity to the wishes of the great benefactor of *us* and of our country, the late President Adams, we are now erecting a temple for the worship of that incomprehensible Being, whom the heaven of heavens cannot contain. When ages after ages shall have passed away, when all now living on earth, and successive generations for centuries to come, shall have finished their probation, and gone to the unseen and eternal world, these walls of granite we are about to erect will stand, we trust, among the recollections of time, a monument of the interest we felt for the worship of God, and for the accommodation of our successors on the stage of life, till the stones themselves of which it is constructed shall be crumbling into dust. In this temple, when completed, may the truth, as it is in Jesus, be preached in all its purity and simplicity. Here may the prayers of devout and humble souls ascend with acceptance to the throne of everlasting mercy. And here may that *faith*, which looks beyond things seen and temporal, to those which are unseen and eternal, which directs the aspirations of the soul to the presence and enjoyment of God in heaven, be animated and confirmed. Our hearts rejoice in the contemplation of the increasing virtue and wisdom of the world; and we offer our prayers to God, that *we* may so finish our course on earth as to enter on our immortal destiny with qualifications for ceaseless progress in goodness." Am. Mag.

POLITICAL ECONOMY.—No. VI.

BY M. WILSON, ESQ.

PROTECTIVE DUTIES.

Among the legislative enactments that have been adopted, for the ostensible object of increasing production, may be enumerated—*Protective duties;* which have ever held a prominent rank in that system of government regulations, which aims at manufacturing wealth, by diverting industry and capital from their natural channels. Duties, or taxes, on imported foreign products, are imposed, by nearly all nations, for the purpose of supporting, or giving greater encouragement to their domestic manufactures. Such duties, by raising the price of the foreign goods upon which they are imposed equal to the amount of the duty, afford an opportunity, to the domestic manufacturers of similar goods, of charging for the same within a trifle of the enhanced price of the foreign article, without fear of competition; and thus secure to them the entire monopoly of the trade. For illustration: suppose that the low price, at which foreign goods could be afforded us, effectually prevented their domestic manufacture. A sufficient tax upon their importation might then render the domestic manufacture a profitable branch of industry. But it is not so clear how the community at large can be benefited by such a system, and if it be found adverse to the general welfare it ought certainly to be abandoned. Believing that duties upon articles of consumption are always injurious to the consumers, and therefore unjust in their effects, that they favor the manufacturing interests only, and thus create an odious monopoly, we shall proceed to examine the policy and effects of protective duties, and state some of the principal objections that may be urged against them.

In the first place, a tax or duty on foreign goods raises their price, and thus obliges the consumer to pay dearer than they otherwise need have done. That a mere rise of price, occasioned by this means, is of no benefit to the nation, but an indirect tax imposed by government upon those who use the foreign goods, will appear from the following considerations.

We will suppose that, in the absence of protective duties, broadcloths of foreign manufacture can be afforded for four dollars per yard, but that our home-manufacturers cannot afford those of the same quality for less than eight dollars per yard. We should then use foreign cloths exclusively. Should government impose a duty of three dollars per yard on the foreign cloth, then all who purchased would be obliged to pay seven dollars per yard for cloth, which, in the absence of the duty, they might have obtained for four dollars. The rise of price, to this extent only, would have no influence whatever on the manufacture of domestic cloths, for the price that could be obtained for them would still be below the cost of production. The effect, therefore, of a duty on foreign cloths, which is not sufficient to raise the price of domestic cloths equal to the cost of their production, is simply this: the importer pays government three dollars per yard for all broadcloth that he brings into the country, and the consumer, or purchaser of the cloth, pays the importer. In other words, the consumer pays the importer three dollars extra

per yard for which he receives no value in return; and the importer is merely the agent for transferring this money into the hands of government. The effect upon all parties would be the same, if the consumers, instead of paying an increased price for the cloth, were taxed by the government three dollars for every yard which they purchased. It is then, thus far, none other than a system of indirect taxation. Its justice, however, considered in this light, may admit of some doubt; for indirect taxes are not levied in proportion to wealth; and, upon this system, if the duties were upon the necessaries of life, a person, worth a million, need not pay more taxes than one worth but a thousand dollars.

But if the duty, instead of being three dollars, should be increased to five, the price of foreign cloth would be nine dollars per yard, and the domestic manufacturer, being able to manufacture cloth for eight dollars, could undersell the importer; and thus encouragement would be given to this particular branch of domestic industry. But let us see if the nation is any gainer in wealth by this system. As far as the manufacturer is concerned, he certainly cannot make a profit of more than one dollar on every yard that he sells, and the probability is that his profit would be somewhat less. Should he charge more than nine dollars for his cloth, the importer of foreign cloths would undersell him; and, besides, free competition will always keep the price reduced to the ordinary rate of profit in other branches of industry. At the most, then, the manufacturer gains but one dollar profit on each yard, and the consumer evidently loses from four to five dollars on every yard that he purchases; in other words, he could, in the absence of the duty, with the same amount of money, purchase double the quantity of cloth that he now can under this system of *protection*. What profit then does the nation derive from the support of domestic manufactures? The duties that encourage them, by diverting industry into unnatural and less profitable channels, thus rendering the avails of labor less, tend directly to diminish the amount of wages which the employers can afford to pay; for where, by any system, the profits of labor, throughout the community, are lessened; whether it be by increasing the expenses of living, or otherwise; the employers will be obliged to pay a less compensation for labor. And, on the other hand, an increased price of the articles of consumption necessary for the support of the operatives must render their demand for wages greater, and thus the effects of the system will be an injury both to employers and operatives generally. If a farmer, merchant, or manufacturer, could, with a certain amount of industry, while living upon eight hundred dollars a year, make a clear profit of one thousand dollars—if, then, his expenses of living were increased two hundred dollars more, his profits in business would amount to but eight hundred dollars per annum. If the southern planter can raise cotton for ten cents a pound, and sell it abroad for fifteen, his profit is the difference between the cost of production and the price of sale. But if anything should happen to increase his expense of living, so that the cultivation of cotton would cost him twelve cents per pound, instead of ten, to the extent of this increase of the cost of production would his profits be reduced. And protective duties, by increasing the price of commodities and consequently the expenses of living, thus tend to diminish the productiveness of industry.

Suppose that, in the absence of the protective system, we could send our wool to England, and have it manufactured into cloth, and returned to us, all for four dollars per yard; who would say that it would be for our interests to impose a duty, by way of penalty, on the return of this cloth into our own hands, and thus oblige ourselves to pay eight dollars where we otherwise need have paid but four? And yet the policy and effects of the protective system are altogether analogous to this case. Where for four dollars per yard we might have obtained from foreigners the manufacturing of our cloth, we voluntarily pay one of our own citizens, perhaps twice that sum, for the same labor; and yet the benefit which accrues to the domestic manufacturer is trifling, when compared with the loss sustained by us.

We have likewise a given amount of capital in the country, and a given amount of available industry, which no system of protection can materially increase. It will certainly be conceded by all, that the most consistent and profitable policy for us to adopt, would be that which might render our industry and capital productive of the greatest possible amount of value. We ought, then, to employ no more industry than is absolutely necessary for the creation of any particular product, and where an article can be produced by five days' labor, we ought not to employ ten. How then does this principle, the truth of which must be conceded by all, affect the policy of that system which universally requires the exertion of a greater amount of industry, where a less amount might be made to create the same value? We ought also to endeavor to purchase as cheaply, and to sell as dearly as possible. A nation will be the most likely to preserve these relations, when it encourages all other nations to bring their goods to its market, as competition, among those who wish to sell, or, in other words, the increased supply, will *lower* the exchangeable value of foreign goods; while a similar principle in the increased number of those who wish to buy, or, in other words, an increased demand for domestic products, will *increase* their exchangeable

value; thus rendering foreign goods cheaper and enabling the nation to sell its own commodities dearer.

We believe that the best policy for a nation to pursue does not at all differ from that which should regulate the conduct of individuals in their domestic economy. Mr. Smith remarks: "It is the maxim of every prudent master of a family, never to attempt to make, at home, what it will cost him more to make than to buy. The tailor does not attempt to make his own shoes, but buys them of the shoemaker. The shoemaker does not attempt to make his own clothes, but employs a tailor. The farmer attempts to make neither the one nor the other, but employs those different artificers. All of them find it for their interest to employ their whole industry in a way in which they have some advantage over their neighbors, and to purchase with a part of its produce, or, what is the same thing, with the price of a part of it, whatever else they have occasion for; and what is prudence in the conduct of every private family, can scarce be folly in that of a great kingdom. If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry, employed in a way in which we have some advantage." It is true if a farmer has time which he can not employ in anything else he may profitably make many of his farming utensils; but if the business of cultivating, gathering, and disposing of his crops, demands the whole of his time, it would be better for him to purchase his farming utensils of the mechanic. If the farmer could make all his farming utensils, equally well as the mechanic, by working twenty days in the year; and if, by working upon his farm ten days in the year, he can raise produce sufficient to purchase his farming utensils, the latter would certainly be the most politic course for the farmer to pursue. The same principle may be applied to nations.

Now suppose that Great Britain had hitherto supplied us with all the broadcloth that we used, and that she exported to this country one hundred thousand yards annually; suppose that we paid for this cloth five hundred thousand bushels of wheat, which cost the country five hundred thousand days' labor; and furthermore, suppose that we could not manufacture the same amount of cloth, of the same quality, with less than eight hundred thousand days' labor; what would be the best policy for the country, to manufacture the cloth, or to raise the wheat and send that in exchange for it?

The answer is at once obvious. While we can raise the wheat we shall do best to purchase our clothes with it. But if there is a great amount of industry in the country, which could not be employed in raising wheat, or any other products, by which to obtain the broadcloth, we might then find it the best policy to manufacture our own cloths; the same as the farmer, who had not land sufficient to employ his whole time in raising wheat, or other agricultural products, might find it a saving to make a part, or the whole of his farming utensils. But as no prohibitory duties on the products of the mechanic could in the least benefit the farmer in this case, so, neither, could prohibitory duties on foreign products benefit that nation which had a surplus of unemployed industry which it might exert in the manufacture of its own cloths.

But although it may, at first, cost us more to manufacture our own cloths than to pay other countries for them, it may be urged, that, by protective duties, we shall hasten the period at which we may profitably supply ourselves; and that thus our ultimate benefit will more than repay our temporary loss. And first, what proof have we that we can ever manufacture cloths as cheaply as some of the European nations can manufacture them? Why can England, for example, now afford them cheaper than we can? If we inquire into the causes that enable the English manufacturer to afford cloths at so low a price, I apprehend that we shall not be so ardent to see the same state of things prevail in our own country. If Great Britain receives the wool and the cotton which supply her manufacturers at the same rate that we receive ours; and the natural facilities of water, steam-power, machinery, &c., are the same in both countries—if then the *wages of labor* are lower in England than in this country, England can certainly manufacture cloths cheaper than we can. And until our population, and especially the operative classes, become so numerous that the laborers are *obliged* to work for a bare subsistence, the wages of labor can never be so low in this country, nor, consequently, can manufactured products be afforded so cheaply here as in Great Britain.

But if it be thought that in the natural course of events we can ever manufacture any given article as cheaply as any other nation can produce it, the farther question arises, can we, by protective duties, hasten such an event; and if so, can we do it profitably? For it may be that the cost would be far greater than the gain. As has been shown, protective duties are a present tax upon the nation; and if their object be to encourage our manufactures until such period as they can support themselves, they should be able not only to support themselves after such period, but, also, to repay the expense of that fostering care which has been bestowed upon them.

For the support of manufactures in a country that possesses natural advantages for them, large accumulations of capital in the hands of individuals are necessary, and also a numerous popula-

tion; and the more numerous and the poorer are the operatives, so much the cheaper may the manufactured articles be afforded. If the wealth of a community be pretty equally divided among its inhabitants, it is evident that the wages of labor will be higher, for those in easy circumstances will not labor as cheaply as those who are pressed by immediate want. Now it has been shown, that where protective duties are necessary for the support of domestic manufactures, they do not increase the sum total of the capital of a country, but, on the contrary, the country is empoverished by them, for they occasion an unproductive expenditure of industry. But although protective duties empoverish the nation, they empoverish that portion of the nation, chiefly, which pays the duties, or the extra price occasioned by them; and the other portion (the manufacturers) continue to increase in wealth. Thus, although there is a deduction from the national capital, yet what remains accumulates in the hands of a few, and the remainder are rendered poorer than they otherwise would be. By the continued operation of such causes we might finally attain that social condition in which, with a numerous, but empoverished class of operatives, our capitalists might successfully compete with European manufacturers. But no lover of his country would wish manufactures to be introduced before their natural time, if the means, used for the purpose, are to be attended with such fatal consequences. At their proper time manufactures will be established in every country where they can be rendered profitable, and it is thought that no legislative enactments can hasten that period without inflicting on the country an evil greater than the good which is gained. But as facts are a kind of argument, the least liable to contradiction, we will advance a few, derived from authentic sources, to illustrate the effects of the French protective system.

To favor the working of her own mines, France has imposed duties on all foreign *iron* imported into the country. During a period of eight years from 1814 to 1822, the French paid, in the increased price of native iron, occasioned by the duties on foreign iron, upward of forty millions of francs. This is the *direct cost* for protection: in other words, it is the price that France has paid for unproductive industry; for she could have obtained the iron for forty millions of francs less than what she gave for it. The iron, which the French are obliged to use, is rendered dearer by this system; consequently the demand for iron has diminished, for fewer can afford to use it; and wherever it is used it has increased the price of everything with which it is connected. The effect of these measures has been to add fifty francs to the price of a plough, and to render cotton machinery one third dearer than it otherwise would be, if imported. The price of charcoal has been doubled, or trebled, and from twenty-five to fifty per cent. has been added to the price of iron. And yet the iron business remains below the average rate of profit.

France has also imposed a duty on foreign *sugar*. This has indeed increased the quantity made at home, and at her islands; but, by the effect of this duty, France pays for the sugar that she now uses, one million four hundred thousand pounds per annum more than she would otherwise pay. Suppose this to continue for twenty years: it will then amount to twenty-eight millions pounds sterling, the interest of which at five per cent., will buy nearly the whole amount of sugar now consumed in France. It was thought that these duties would give encouragement to the manufacture of sugar from beet-root, which would finally supply France at the ordinary price. But long before such a period can arrive, if it *ever* can arrive, France will have expended a sum of money, the interest of which would far more than supply her with the sugar that she now consumes.

In order to favor the *cotton* manufacture, for which she is but poorly adapted, France has imposed duties upon the products of other nations, which have retaliated by imposing duties on her wines and silks. Thus, other nations, which before purchased these articles of France, now supply themselves, which has been such an injury to France, that since the Revolution her exports of wines and silks have considerably diminished. Thus the industry of France has been expended upon products that were not natural to her soil and climate; and other nations, for the sake of retaliation have expended their industry upon what is not natural to them.

With these facts (and numerous others might be produced) to corroborate the principles which we have advanced, we think it must be apparent that the productiveness of all countries would be greatly increased if all could be induced to adopt the liberal system of *free trade*. But while many admit that the free trade system would be the best for all nations, if *all* would adopt it, they contend, that if one nation adopts the prohibitive policy, others are obliged, in self defence, to adopt the same. For example, we are told that if England imposes duties on the cotton that we export to that country, we must, in *self defence*, oblige her to pay duties upon broadcloth, or some other product with which she supplies us. By obliging us to pay the duty on cotton, England may inflict a severe injury upon us; for she may thus deprive us of our best market for cotton; but at the same time she inflicts a greater injury upon herself; for if she attempts to cultivate the cotton, either at home, or in her colonies, the very fact that she is obliged to support that cultivation by a duty upon our cotton, shows that

her industry might have been more profitably employed in the creation of some other product which she might have exchanged for our cotton. But although we suffer by the policy of England, shall we gain anything by adopting the same policy toward her? While we continue that policy it is evident that we shall be injuring ourselves, and the only wisdom that can be conceived in such a course, would be the probability that we might induce England, by injuring her, to adopt a more liberal policy toward us. If, however, the foreign trade of nations were regulated by their true interests, there would no longer be any necessity for this destructive system of commercial warfare.

It is however urged, that if we admit the importation of foreign goods free of duty, and thus prevent the establishment of home-manufactories, we may, in case of war with foreign nations, be entirely cut off from the supply of those foreign articles of consumption, and we shall then be unable to supply ourselves from our own resources. There is, however, little probability that any foreign nation, for the sole purpose of injuring us, would take a step so detrimental to her own interests. England, for example, is a great manufacturing country, and manufactures are her chief dependance. To deprive her of her chief market for these would inflict upon her an injury far more serious than she could inflict upon us. Should all nations prohibit the introduction of her manufactures, the prohibition would strike at once at the root of her national prosperity. We then, although adopting the free trade system, should still have the vantage-ground of those from whom we purchased. But should England ever, in case of war or otherwise, adopt a policy so suicidal to her own interests, she will, even then, have the power of depriving us of but few of the *necessaries* of life; but to close her manufactories, even during one season, would produce absolute starvation among thousands of her operatives. We can easily supply the place of her broadcloths by wearing a cheaper article of domestic manufacture, and should she continue her prohibitive policy we should soon establish manufactories of our own. There is little probability, however, that the British government would long resist the clamors of a population famishing for want of bread.

There are, however, a few articles, upon which we may with propriety impose duties in order to encourage their home manufacture, and these are those munitions of war which are necessary for the national defence. Thus, if, in time of peace, we received all our munitions of war from Great Britain, because she could afford them cheaper than we could manufacture them, it would certainly be an advantage to the nation to obtain them from that source provided it could always thus obtain them. But if war occurred Great Britain would prohibit the export, from her ports, of munitions of war, and thus we might be left at the mercy of our enemy. It is best for the nation to guard itself at any hazard, against such an event. And although duties upon articles of necessity are an evil, yet, in this case, it may be an unavoidable one. The celebrated English Navigation Act, which prohibited all but British ships from trading to British settlements and plantations, or from being employed in the coasting trade of Great Britain, upon pain of forfeiting ship and cargo, had the same ultimate object in view—the national security which was to be promoted by increasing the number of English sailors and shipping, and by crippling the commerce and naval power of Holland, the only power which could at that time endanger the security of England. The Dutch were then the great carriers of Europe, and Holland was the great emporium of British goods; and although the policy of England was averse to the pecuniary interests of the great mass of her people, it was doubtless, the most effectual means of weakening her enemy, where the defence of a nation is really concerned, which is always of much more importance than its opulence, such commercial regulations may be the wisest means of temporary defence that could be adopted. But as a matter that concerns national wealth alone, unaffected by apprehensions of danger from increasing power of a rival, they can never be justified; and diminishing, as they do, the national resources, they must be considered, on the whole, as a general policy, directly adverse to a wise system of permanent national defence.

The opinions of all the eminent writers on political economy are directly opposed to the *protective*, or, as it is usually called in this country, the *tariff system*. And, indeed, it is surprising that any person, acquainted with the general principles of political economy, can be in favor of this system, as a means of promoting the national wealth, and yet many of our most distinguished statesmen are its advocates. Their arguments, however, abound more in appeals to the national pride than in attempts to show, by sober reasoning, the utility of the system which they recommend. It must be admitted, that the sudden repeal of our protective duties, after the encouragement which they have given to particular branches of domestic industry, would be a fatal blow to the manufacturing interests of the country; and if these duties are to be repealed, it should be done in so gradual a manner, that the industry which they have encouraged may be diverted, without serious inconvenience, into other channels. Our protective duties have encouraged many capitalists to engage in manufactures, with the expectation of receiving the con-

tinued support of that system which first opened to them that new channel of industry, and it is certainly unfortunate that government should excite expectations, which the interests of the community, at large, afterward require should be defeated. But if we have fallen into an error in adopting a partial and unjust system, are we bound to persevere in it for the benefit of a few, and to the detriment of the great mass of the people? Such a policy would prevent the correction of almost every error, into which, the ignorance of the public servants may have led the people, and would be totally inconsistent with the principles of a government which professes to legislate for the "common welfare." The greatest good of the greatest number, should ever be the primary and leading object of republican legislation. A legislative measure to abolish our tariff system would, however, meet the immediate and earnest opposition of a large body of influential capitalists, and the suffering and distress that might be foreseen from the sudden closing of many of our manufactories, will long deter any party in power from the hazard of risking its popularity by a measure, the anticipated results of which, can so easily be converted into political capital against the party adopting it. The remedy, at best, must be slow in its operation, and the entire abolition of protective duties should not be attempted until the people are sufficently acquainted with this branch of political economy to understand how their interests are affected by the continuance of the present system.

THE CARTOONS OF RAFFAELLE.

No. I.—CHRIST DELIVERING THE KEYS TO ST. PETER.

In the Cartoons of Raffaelle, England may congratulate herself on being in possession of the noblest works of art which have ever been produced by human genius. The history of these designs, subsequently to their completion, as well as that of the tapestries which have been copied from them, is extraordinary. Estimated originally as the most splendid ornaments of regal and pontific state, they have since been exposed to all the vicissitudes of fortune; seized as the spoils of war, dispersed in revolution, disfigured by ignorance, and mutilated by avarice. Happily, the seven composition at Hampton court, if compared with others of the series, still to be seen in tapestry, must rank among the finest of the number, and they are in good preservation. Two or three others are said to be extant. The rest of the set, originally twenty-five, it is to be feared, have perished.

It was within a few years of his death, and during the meridian of his powers, that Raffaelle was engaged by Leo X. to design this series of subjects, taken from the life of our Savior and the Acts of the Apostles. When finished, the Cartoons were sent to Brussels to be woven in tapestry, under the superintendance of Bernard Van Orlay, at a cost of 70,000 crowns. It seems surprising that when the tapestries were completed the Cartoons were not reclaimed and brought back to Rome: the circumstance, however, explains itself by referring to the events of the period. Both Raffaelle and his munificent patron, Leo, had died in the interval; and the succeeding pontiff, Adrian VI., a man of narrow capacity and destitute of taste, bestowed not a thought on those arts which had distinguished the reign and were destined to immortalize the memory of his illustrious predecessor. It is more inexplicable, that, among the persons who superintended the execution of the tapestries, there were not some who were capable of appreciating the excellence and value of the originals, more especially as Van Orlay and Michael Coxis, both engaged in those works, had been pupils of Raffaelle. From whatever cause, the Cartoons were thrown by as things of no value, and left to moulder and decay among the lumber of the manufactory: it has been said that they were even exhibited occasionally in the front of the house as signs, indicating the vocation carried on within. From this state of degradation they were redeemed by Charles I., at the recomendation of Rubens, and brought to England. The obligation due to this monarch, to whose taste we owe the acquisition of the Cartoons, is to be extended to Cromwell, by whose discernment they were secured to the country during the sale and dispersion of the royal collection. They were purchased at the immediate command of the Protector, whose sagacity seems in this, as in most other instances, to have outgone that of his contemporaries, on whom the showy ostentation of Andrea da Mantegna appears to have made a stronger impression than the chaste and intellectual grandeur of Raffaelle. The triumphs of Julius Cesar, painted by the former, were valued at £2000; the Cartoons of the latter at £300. After this period these works were consigned for a long time to obscurity and neglect. They had been sent by King Charles II. to Mortlake, to be copied in tapestry by an artist named Cleen, who superintended a manufactory of arras at that place, originally established by James I. Here they met with no better treatment than they had formerly encountered at Brussels; for it was found, when they were afterward opened and inspected by the command of King William, that they had been so carelessly packed as to have sustained considerable injury. By this lastmentioned monarch they were consigned to the care of William Cooke, an artist of considerable talent, by whom they were repaired, and happily restored to their original appearance. The gallery at Hampton court was built by King William for their reception.

The following is a list of the subjects, and the original number of Cartoons executed by Raffaelle:—

1. Paul preaching at Athens

Christ delivering the keys to St. Peter.

2. The Death of Ananias.
3. Elymas the Sorcerer struck with Blindness.
4. Christ delivering the Keys to St. Peter.
5. The Sacrifice at Lystra.
6. The Apostles healing in the Temple.
7. The Miraculous Draught of Fishes.
8. The Conversion of St. Paul.
9. The Nativity.
10. The Adoration of the Magi.
11. Christ supping at Emmaus.
12, 13, 14. Slaughter of the Innocents.
15. The Presentation of the Temple.
16. The Descent of Jesus Christ into Limbus.
17. The Resurrection.
18. The Ascension.
19. Noli me tangere.
20. The Descent of the Holy Ghost.
21. The Stoning of St. Stephen.
22. The Earthquake.
23, 24. Children at Play, catching Birds, &c.
25. Justice.

The first seven above enumerated are those at Hampton court. Two others are said to be in the possession of the king of Sardinia; and a third, one of the compartments of the Slaughter of the Innocents, is in this country, having been accidentally discovered, and purchased by P. Hoare, Esq. The rest, with the exception of a few dismembered fragments, are all lost; the designs, however, are still visible in the tapestries at Rome.

Such is the history of those noble productions. But notwithstanding the neglect and partial destruction to which they were so barbariously consigned, their reputation was in the meantime promulgated and established through the medium of the tapestries. Nor can there be a stronger proof than this of their deep intrinsic excellence, which could make itself felt and understood though a mode of copying so coarse and inefficient; although we must admit that, considered not as transcripts of fine art, but merely in the light of splendid furniture, nothing can be more magnificent than those stately hangings of arras. The two first manufactured were intended by Leo X., the one for the apartments of the papal palace, the other as a present to Henry VIII., of England. These works were destined to encounter a greater variety of adventures than even the original Cartoons. The first account we have of their appearance was during the pontificate of Paul IV., by whose order they were suspended on high festivals in one of the vestibules of the basilica of St. Peter. It is said that they excited delight and astonishment not only among the learned in art, but that they were viewed by the populace with enthusiastic and unsated avidity. In the sack of Rome, in 1526, they were carried away, but were restored during the reign of Julius III., by the Duc de Montmorenci. Again, in 1798, they made part of the French spoliations, and were actually sold to a Jew at Leghorn, who burnt one of them for the purpose of extracting the precious metal contained in the threads. As it was found, however, to furnish very little, the proprietor judged it better to allow the others to retain their original shape, and they were soon afterward repurchased from him by the agents of Pius VII., and reinstated in the galleries of the Vatican.

The second set of tapestries, intended by Leo X. as a present to Henry VIII., of England, were accordingly transmitted to that monarch, although it is affirmed by some authorities that he obtained them by purchase from the state of Venice. On their arrival in England, they were hung up in Whitehall, and descended, as a royal appanage, through the reigns of Edward VI., Mary, Elizabeth, James I., and Charles I. After the

death of that unfortunate monarch, they were purchased by the Spanish ambassador in London (Don Alonzo de Cardanas), who carried them to Spain, and from him they devolved to the house of Alva. From a palace belonging to the dukes of that name, they were purchased, a few years since, by Mr. Tupper, our Consul in Spain, and restored to this country. They were afterward exhibited for some time at the Egyptian Hall, in Piccadily, finally repurchased by a foreigner, and by him taken back to the continent.

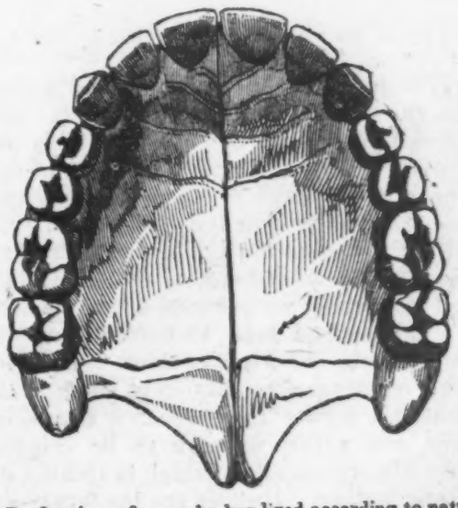
As the finest examples of the higher qualities of art, the Cartoons have been sedulously studied and copied, wholly or partially, by the most eminent painters; copies of the seven at Hampton court, by Sir James Thornhill, were presented by Francis, Duke of Bedford, to the Royal Academy, and another set is in possession of the University of Oxford, the gift of the Duke of Marlborough. They have been engraved in this country by Dorigny, and by his scholars, Dubosc and Somereau. The beautiful and elaborate plates of the seven Cartoons, to which the late Mr. Holloway devoted a large portion of his life, will form a lasting monument of that artist's talent and perseverance.

To enter on an analysis of the style of Raffaelle, would far exceed the limits which we can assign to this article; we purpose to return to the subject, and shall in the meanwhile confine our remarks to the Cartoon engraved in this number, *Christ delivering the Keys to St. Peter.* To any other artist than Raffaelle, this subject would not, perhaps, have presented any striking capabilities, as the action and expression, however solemn and pathetic, is deficient in that variety and force which gives effect to graphic representation. But wherever human feelings were brought into play Raffaelle found the elements of his art; and his power in marking the diversities of character, and in discriminating the shades of sentiment, have never been more strongly evinced than in this work. The Redeemer stands alone, distinguished by a majestic simplicity of action. With one hand he points to a flock of sheep, symbolically introduced in illustration of the text, "Feed my sheep;" with the other he consigns the keys to St. Peter, who kneels with devout reverence to receive them. The apostles are formed into a compact group, and appear earnest to receive the last commands of their Master, previously to their separation and dispersion to preach the Gospel in all parts of the earth. St. John, the beloved of Jesus, presses eagerly forward, the veneration he evinces being mingled with an expression of affectionate attachment. Behind him stands an apostle whose action is less animated than that of his brethren: it has altogether the cold and sedate demeanor of a person of skeptical temperament. This is undoubtedly St. Thomas; and next to him, in fine contrast, is a disciple who stretches out his hands toward Christ, and turning to the incredulous apostle with an expostulatory and somewhat indignant air, seems to say, Are you yet convinced? Every head in the group has its peculiar physiognomy, with the expression properly belonging to it. Some express the most entire and deferential acquiescence in the preference given to St. Peter, while across the countenance of others steal the signs of jealous dissatisfaction; for Raffaelle, although he has given the apostles an exterior befitting men who have been called to so high and solemn a vocation, yet shows that as men they are not entirely divested of human weakness. The expression of the Savior is at once sublime and beautiful; it is that of triumphant virtue and Divine power, yet touched by the traits of recent suffering. It may be added that the costume is different from that in which he is elsewhere represented. It is simply a white drapery, which nearly envelopes his figure, but leaves one of the shoulders uncovered: this indicates that he has arisen from the dead. The whole subject, although so finely amplified, is yet so condensed, and presses on the mind with such truth of delineation, that while we look on the picture, we feel a difficulty in believing that the event could have happened in any other manner than as it is there represented. Penny Magazine.

EFFECTS OF STIMULANTS.

ADDRESSED TO YOUTH.

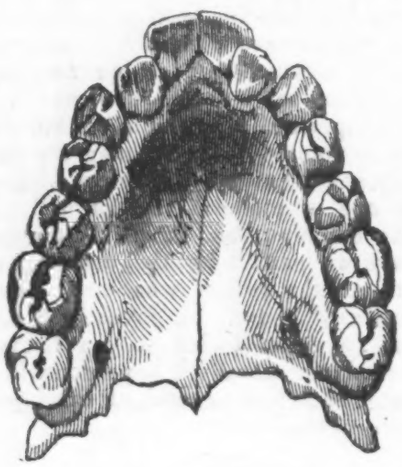
HABIT is second nature, and when we have been accustomed to do wrong all our lives, especially when the evil has been sanctioned by the example of our nearest friends, it is next to impossible to be convinced we are in error; but my design is to convince before I convert. I shall first present a perfect jaw, and afterward one of an opposite character, that you may see the difference between a naturally developed jaw and teeth, and one of modern "invention." Then perhaps the question shall arise in your minds, "What have we gained by the use of tea and coffee, with all the rest of what are commonly called luxuries?" and if, on investigation, you think these have not added to our happiness, either physically or morally, I hope you will have moral courage sufficient to break off this injurious habit of using them.



Perfect jaw of one who has lived according to nature.

The individual whose jaw is here represented, is a native of the torrid zone. His habits previous to visiting our continent, had been simple and natural; never having tasted any of our popular medicines, such as tea, coffee, alcohol, tobacco, opium, calomel, salts or any other fashionable poison, either vegetable or mineral. He had very seldom taken flesh, and then it was prepared very simply without seasoning or spices. His usual diet had been the fruits of the earth without artificial preparation, and his drink, the pure element which Heaven has so abundantly supplied for the use of man and beast.

Now we will look at his jaw, and see the consequence of simple living. You see the arch of the jaw is perfect, the teeth regular and even, not running zigzag and encroaching on their neighbors for want of room, as I fear the teeth of many of my little readers do; but all in the order and place their Maker assigned them, and a source of comfort instead of pain to their possessor. Here is no tartar to be removed, no caries to be cut from the living body, no aching teeth to be extracted, but all sound and healthy. But you will appreciate this better, when you see the contrast my next picture presents, which I fear will correspond too well with many of your own cases; as my experience in my profession sadly proves. Few, I am convinced, can say of their teeth what has here been said of this poor African's.



Distorted jaw of one who has lived according to fashion.

You will at once see the difference, and perhaps may think the drawing itself sufficient, but I have a story to tell you about the owner of this jaw also. He is a young man about 16 years of age, and has been in the habit of chewing and smoking tobacco since he was six years old. But this is not all. He has always eaten flesh three times a day, drank tea and coffee, and used all the spices and seasonings so common at the present day. His parents had done so before him, and he was not only an inheritor of these evil habits, but of the consequences attending such violations of nature's laws. This person is very small for his age, and nature appears to be crippled throughout his organization, which is nothing uncommon now-a-days. He told me his father was very well one day, and dead the next. Now we know this would not have been the case without some sudden accident; for the idea of a well man falling down dead is absurd; because if the body is in perfect health and vigor, it will not so suddenly cease to exercise its functions. It was only the natural result of his infringement, of physical laws. And very many are in the same condition, and as ignorant as he appears to have been of the fact. And now let us contrast these two cases. I have described the first, let us look at this one.

The jaw, although contracted, contains all the teeth, showing that nature is willing to do her part of the work, if we will do ours; but not finding room to form them regularly, is obliged to place them in any position she can. You see how the teeth crowd each other, and that their beauty and almost all their utility are lost by the jaw being so imperfectly formed. And how many of my little friends are any better off? I am merely describing what I see every day—little children having their jaws and teeth cramped so that it is impossible their teeth will last to half the age God designed man to live.

God has said he will visit the iniquities of the parents upon the children, and if any of you have diseased jaws and teeth in consequence of your parents' errors, be careful you do not increase the evil by your own ignorance, but seek to understand for yourselves what is best for your bodies, and do not think, because your parents and friends have erred through ignorance, on this subject, that is any excuse for you. And when our kind Benefactor has so bountifully supplied us in all parts of the world with a wholesome beverage, do not let us poison the pure stream by any stimulant or narcotic, either foreign or domestic, but remember, he who formed us, knows what is best for us.

JOHN BURDELL, 69 Chambers St.
NEW YORK, *October*, 1840.

PHILOSOPHICAL EXPERIMENTS.

ACOUSTICS.

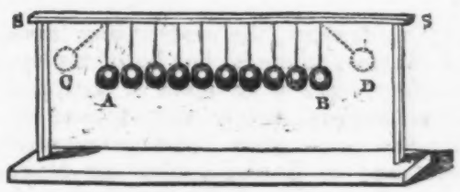
THE way in which sound is produced is by an elastic substance being put into a state of vibration, by some means, which then imparting its motions to the air, is by that medium transferred to the ear, and thence to the nerves, provided to make us sensible of the effect produced. If a glass tumbler be struck with the finger, it vibrates and produces a certain sound. But in consequence of the rapidity of its motions, the vibrations cannot well be distinguished; a certain faintness of outline will, however, be perceptible on the rim. If a small light ball, as a pea, be

Fig. 1.

suspended by a string so as to hang close to the edge of the glass; when the tumbler is again struck with the finger—or excited by drawing a violin-bow across the rim—the ball will fly off from the glass, and then falling back, it will again be struck off, and so on, until the vibration ceases. If the glass, while in a state of vibration, be brought near to where the sun shines, through a window, the minute particles of dust floating in the atmosphere, which are seen in the vivid light of the sunbeam, will be put into a state of violent commotion, showing plainly the vibration of the air from the impulse of the vibrating glass.

The way in which the motion of the sounding body is propagated through the air, is similar to the circle of waves which arise on throwing a stone into a pool of water. Although the waves are perceived at a distance of some hundred feet from the place where the stone fell, yet the individual drop of water which the stone first touched, has not moved perhaps at all. The motion being transferred from one particle to another, over a large space, without those particles moving much out of their respective situations. This may be illustrated by the following easy experiment:—On an even line s s,

Fig. 2.



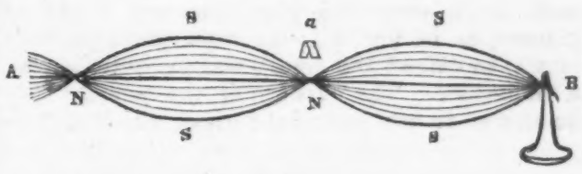
hang as many balls as you please; then elevate the ball A to C, where it is represented by the dotted lines. When it falls it will strike the ball next to it, and that force will be imparted through all the balls without any apparent motion in them, until it reaches the last (B), which will be thrown out nearly to D. These balls may represent the atoms or particles of matter composing the air. Then a vibrating body having communicated a motion at A, it will be continued through the air, until it reaches the ear at B, where the effect will be felt by organs purposely placed there by our Creator to transfer such sensation to the mind. The difference of tone perceived in vibrating bodies is caused by the number of beats made in a certain time. For instance, if a string A B be pulled up to *a*, and then suffered to collapse, it

Fig. 3.

will fall nearly to *b*, and will then return nearly to *a* again, and so on, diminishing the distance at each pulsation. When the string is pulled by the finger to *a*, it will form an angle as represented by the straight lines; but when vibrating by itself it forms a segment of a circle, as represented by the dotted lines. The motion of the string from *a* to *b*, and back again, is called a vibration.* When these vibrations occur with a velocity of sixteen in a second of time, a very low sound is heard, and as the velocity of the pulsations increase, the sound becomes shriller or higher. The nerves of the human ear are so constituted as only to take cognizance of those sounds produced between the extremes of sixteen pulsations in a second, and 15,000; about which extremes no sound can be heard. It is conceived that insects produce sounds which, though heard by their own species, are so very shrill as to be undistinguishable by us.

All sonorous vibrating bodies will be found to have certain parts moving quickly while other parts are at rest. Tie a piece of string A B at B,

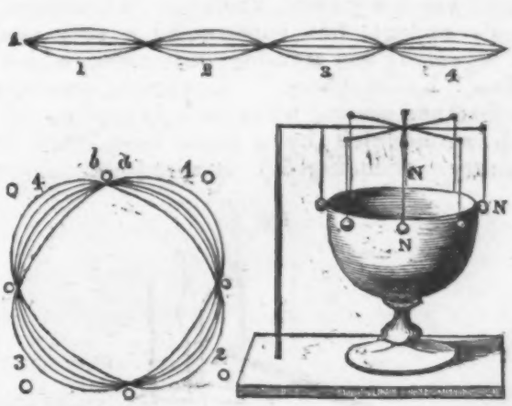
Fig. 4.



apply the hand to the end B, and move it up or down about twice in a second, we may then perceive the string assume a form similar to that in Fig. 4—that is, the parts at s s will be moving very quickly, so as to appear as segments of circles, while no motion will be observed at N N. If pieces of paper, as *a*, be laid across the string at various parts, it will be found that they will all be shaken off except those placed at the points N N. If the motion of the hand be increased, there will be more waves produced. The stationary points N N are called *nodes*, and the vibrating portions are denominated harmonic *segments*.

All bodies in a state of vibration, of whatever forms they may be, will possess the harmonic nodes and segments arranged in some manner. If a bell or glass bowl be put into a state of vibration, the nodes and segments may be perceived around the rim, and will appear as if a vibrating string, A B, had been made into a circle, so as to bring the ends *a b*, close to each other. This

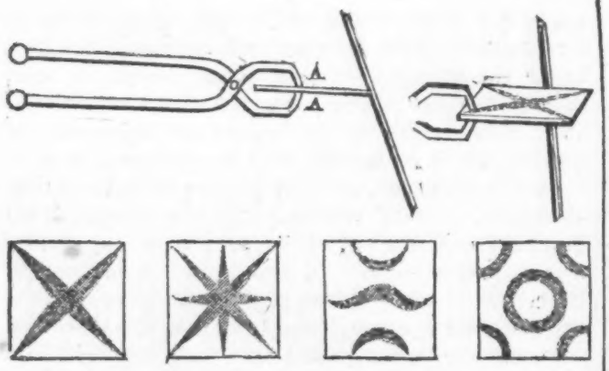
Fig. 5.



* Some persons hold that the moving of the string merely from *a* to *b* constitutes a vibration, but the definition given to the text appears to us the better one.

may be shown by placing little balls round the glass as in (2) Fig. 5. Now the glass, being made to vibrate by drawing a violin-bow across the rim, if it is sufficiently large, will produce a note by which the segments will be four in number; and the balls placed at N N N N (being the nodes, or silent parts), will not move although the others will be violently repelled. The form of the vibrating portions of the goblet will be better understood by a reference to (3) Fig. 5, which is intended for the glass seen from above. A square flat piece of glass will have segments and nodes somewhat similar to the glass tumbler, but the number and dimensions of these vibrating portions will be according to the note produced—the manner in which the glass is held—and the way in which it is excited. If dry sand is strewed over a flat piece of glass, the vibrations will throw the sand into a variety of beautiful figures. The best way to perform this experiment is to place the glass between a pair of pincers, as in Fig. 6 (with little pieces of cork at A A, to defend the glass), and to excite it with a violin-bow. The position of the pincers may be altered to any part of the glass, which may be

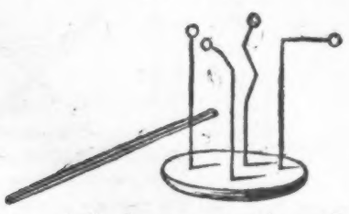
Fig. 6.



of all forms and sizes. In the above four squares are delineated some of the most simple figures which may be produced by these means; they are, however, infinite. We are indebted to Chladni and Savard for these ingenious experiments.

Beside the lateral or normal vibrations of a string, of which we have hitherto only spoken, there are vibrations produced longitudinally; to render which apparent, Professor Wheatstone, of King's college, has constructed a very simple but ingenious and amusing instrument, which he calls a "Kaliedophone." In a strong stand there are fastened several wires, bent in various forms, each surmounted by a glass bead filled with mercury. (See. Fig. 7.) A wire is put in motion

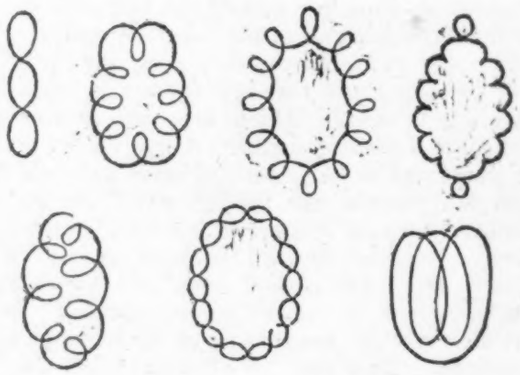
Fig. 7.



by drawing a violin-bow across it, and the bright bead at the top will render the form of the vibrations easily apparent. Of course, the figure produced will vary with the length and thickness of the wire, and the place where the bow touches it.

We subjoin some of the most common figures. When the experiment is performed by candle-light, the reflection on the bead, seen against a dark background, appears as a figure of fire, and of course is very beautiful.

Fig. 8.



Mr. Schomburgck, the enterprising traveller in British Guiana, where he has been employed for the last four years as an agent of the Royal Geographical Society, and at the expense of their funds, aided by a grant from government, has just returned to England, after an absence of nearly twelve years. Following in the steps of Dr. Hancock, Mr. Hillhouse, and others, he twice ascended the river Essequibo, which he explored to its sources, about forty miles north of the equator, and then examined the Berbice and Corentyn rivers. During his last journey, in which he was absent for two years, in the interior, he crossed the boundary to Fort San Josquim, in the Brazils, and by a westerly course, travelled to Esmeralda, on the Orinoco, thereby connecting his labors with those of Baron Humboldt in 1800, and materially changing the position of the sources of that river, as laid down in all our maps. Thence he again ascended the Rio Branco, to San Josquim, completing a circle of upward of two thousand miles, a great part of which was through a country previously unknown. Mr. Schomburgck's communications have often formed matters of interest at the meetings of the Geographical Society, and he has brought over with him to this country, a valuable herbarium, and a large collection of rare specimens of natural history, the produce of a country almost unknown to Europeans. He is also accompanied by three Indians of different tribes, from the interior; and has brought specimens of their arms, implements, and utensils. Accounts have also been received from Mr. Gould, who has left Van Dieman's Land for Southern Australia, having already collected about eight hundred specimens of birds, and seventy quadrupeds, with many other objects of interest in natural history.

THE EMIGRANT'S DAUGHTER.

THE EMIGRANT'S DAUGHTER.

My mother's grave! 'T is there beneath the trees.
I love to go alone and sit, and think,
Upon that grassy mound. My cradle hours
Come back again so sweetly, when I woke,
And lifted up my head, to kiss the cheek
That bowed to meet me.—*Mrs. Sigourney.*

Ay, there is, indeed, a mournful pleasure in turning aside from the ceaseless bustle of busy life—to leave behind its wearying toils and distracting cares, and steal noiselessly into the city of the dead, and hold sweet converse with departed friends who now inhabit its lonely dwellings. Even to the stranger from a distant land, who carelessly deciphers the time-worn memorials which mark the name of the indwellers, there is something soothing and refreshing in meditations which arise while passing among the habitations of the graveyard, and seeing evidences all around him, not only that infancy, youth, manhood, and old age, have alike contributed to swell the population of this quiet spot, but that the affections of the living for the dead are yet linked to departed ones by the outward service of the sculptor's chisel, as well as the deep graven impressions upon the heart. He feels as if he was standing upon the boundary which divides the past and the present generation, and is holding silent yet instructive communion with the sympathies of the living and the dead; and this feeling lulls the storm of passion into repose, subdues the ardor of ambition, and clothes the tractile spirit with the garment of humility.

But when the parent approaches the grave of a darling child, or a child bends over the green sward beneath which a parent sleeps—when living friends stand around the tenements of friends departed—then it is that the fountains of deep feeling are unsealed, and the warmest sympathies of our nature are brought into action. The cold stoic who may pass along the world's highway, unmoved by the miseries of his fellow-travellers and untouched by the pathetic appeals of suffering brethren, cannot withstand the melting influence imparted at the sight of the grave of a dear relative or friend, and he involuntarily pays to past affection the purest tribute of a generous heart—a tear.

There is no temple more holy, wherein we may worship with purer devotion, than the churchyard; nor is there an altar more sacred than the sepulchral mound whereat the heart may pour out its holiest aspirations, or whereon affection may deposite its precious offering, albeit but an evanescent flower of the field. Around such an altar, within such a temple, memory delights to linger and dwell, and to paint in all the glowing colors of the halcyon of life the delightful images of the past, when the sleeping one was at our side, shared in our joys and sorrows, and ministered bounteously to our comfort and happiness.

Deeper still is the feelings of the child when summoned by circumstances to leave the vicinity of a mother's grave, forego the soothing pleasure of a pilgrimage thither, and depart for a strange land. It is a hard thing to say farewell to living friends, those with whom we may still interchange words of affection even when separated by mountains and seas; but, when called upon to leave a mother's grave behind, to permit the flowers we have planted upon it to wither and die, to break off our holy communings with the hallowed dead, and leave the path to her tomb to be trodden only by strangers or overgrown with brambles, then it is that we are forced to sever a link in the chain of pure affection, that nothing temporal can supply. And such is the link broken by thousands of the emigrants who swell the mighty stream of population which is constantly flowing westward from the shores of the Atlantic, and irrigating in every direction the vast wilderness of the occident. The brief story of one is the story of thousands; and we give it with the unaffected simplicity of truthful narrative, as it was told us.

During the prevalence of the yellow fever in New York, in 1790, a distinguished merchant, alarmed for the safety of himself and family, closed his store and retired with his whole household to his paternal estate, on the bank of the Hudson, then in possession of his only surviving parent, an aged mother. His family consisted of a wife, three daughters, and a son; the latter a youth of only fourteen summers. But they had hardly reached their rural retreat, joyous with the thoughts that they were safely beyond the reach of the pestilence, before the painful evidence of the presence of the contagion was visible in the wife. The miasma of the "infected district," had impregnated her life-blood ere she left the city, and, in less than a week after she reached the abode of apparent health and safety, she was borne to the family churchyard. Next, a daughter who had watched incessantly at the bedside of her dying mother, followed her; then the son, and at last another daughter—all, all were cut down like blooming flowers of the field, and disappeared for ever. One child alone remained to the grief-stricken father—a blooming girl of seventeen; and upon her were all his warmest affections centred. Broken in spirit by the terrible blows he had suffered, and entirely unnerved for the arduous duties of commercial life, the merchant closed his business in the city, and resolved to pass the remainder of his days in the quiet seclusion of his paternal home, where all that was dear to him were now enshrined.

Time passed on—the aged mother retired to her final resting-place, and the daughter became

to the father—the lonely, heart-broken father—the only staff upon which he could lean for support in his affliction. With the true philosophy of woman's love and woman's courage, she seemed to gain new strength with every shock; and that sorrow which bore down the spirits of her father, was a prompter to her exertions to buoy him up. But all her efforts were vain; for the canker-worm of grief destroyed his health, and gave warning that ere long he must join his silent household in the sleep of death.

Although in the presence of her father, the daughter seldom permitted her tears to flow, yet not a day passed in summer that she did not strew fresh flowers upon the graves of her dear lost ones, nor in winter that her scalding tears did not mingle with the snow that covered them. The spot where her mother, and sisters, and brother, were buried, became so hallowed in her mind, that she often fancied that she heard their sweet voices floating upon the evening breeze in summer, and their sighs trembling upon the keen winds of winter. She knew that ere long her only parent must likewise be a dweller there; and the thought that circumstances might separate her from that holy place, caused anguish most severe.

The father died! and then the feeling of utter loneliness came over the poor girl with its greatest power. Though the comforts of a maternal uncle's home were hers—though she became the affianced bride of a wealthy young farmer to whom she had yielded her heart and all the affections it possessed, and to whom she had been given as a precious jewel, by her dying father—yet a cloud of deep melancholy cast a shade over her path, and memory chained her affections to the spot where the dearest treasures of earth, to her, were deposited.

Years sped on in their rapid flight—three children, beautiful buds of promise, blessed their union, and awakened new emotions in her bosom, which gradually weaned her thoughts from the sorrowful retrospect of the past. But adverse gales of fortune nearly wrecked the pecuniary prospects of her husband, and he resolved to join the tide of emigration flowing rapidly into Michigan, the then *El Dorado* of the "far west." Willing to be guided by circumstances, even though they dealt harshly with her feelings, the affectionate wife gave her willing assent to bid kind friends farewell and seek a new home in the western wilderness. But one thought—the thought of leaving the graves of her beloved ones behind—gave her the greatest sorrow; and when the trying hour of departure came, and friends gathered round to bid them adieu and invoke blessings upon them and their enterprise, she exchanged those greetings without much emotion; but when for the last time she strewed the early spring flowers upon the tombs of her parents and sisters, and laved the upspringing herbage upon their graves, with her warm tears, then it was that a fearful struggle, between duty and affection for the dead, took place. She yielded, however, and with a sorrowful heart pressed her babes to her bosom and followed her kind husband to the wild regions of the far west.

A few years passed on—the almost desert where the log-hut of our emigrant was reared began to "blossom like the rose," and the comforts of home and of neighborhood clustered around them. The strong feeling of filial affection which embittered the first few months of her residence in the forest, gradually weakened, and she became calm and happy in the pleasing duties of educating her children, and soothing her husband in his toils. Disease, however, invaded the emigrant's dwelling, and her children were left motherless. Her fond husband deposited her precious remains beneath the umbrageous branches of a magnolia, and *her* children in their turn planted wild flowers upon their mother's grave.

"The lonely man still ploughed the soil,
Though she, who long had soothed his toil,
No more partook his care;
But in her place a daughter rose,
As from some broken stem there grows
A blossom fresh and fair."

Thoroughly imbued with all the virtue and piety of her mother, this daughter, then just expanding into womanhood, became the excellent instructress of the younger children and a soother of the cares and sorrows of her father. Strong and robust, she endured the labors and many privations of a wilderness-home with cheerfulness; and, when the duties of the day were over, it was her delight to have all drawn around the fireside and listen to her reading and expounding of the Writings of Truth. And when the summer twilights came on, she might frequently be seen amid her little brothers and sisters, sitting upon her mother's grave, impressing upon their young hearts the beauty of her example, and drying their tears of sorrow by pointing to some brilliant star as it came forth, as the imaginary land of rest where the spirit of their mother was happy, and looked down upon them with all a parent's solicitude. Frequently she might be seen with basket on her arm, carrying necessaries to some unfortunate family in the wilderness, far away from her own home; and then hying to the spot where her father's axe was heard, to tell him of the blessings she had received while bestowing her gifts. The emigrant's daughter was indeed a lovely flower, and many were the sturdy young foresters who sought, but in vain, to pluck her from her parent-stem. She

was there too closely allied to be easily induced to leave her father's roof, while his comfort demanded her service and her little brothers and sisters required her maternal care.

Again disease came to their dwelling, and the father was laid beside his wife. His eldest son took his place at the plough, while the daughter acted as a guardian spirit to all. The sequel may be told in a few words. She married a backwoodsman, a man of stern integrity, strong mind and exemplary honesty; and the talented Dr. T———l, a late distinguished, though very young member of the popular branch of the Indiana legislature, was ever proud of the privilege of calling her mother.

EXTRACT FROM A LAY SERMON.

We extract the following eloquent passages from a Lay Sermon, delivered on ship board in the middle of the Atlantic ocean, to an audience composed of the cabin and steerage passengers of one of our packet ships, by A. Davezac, Esq., late Chargé d'Affaires of the United States, at the Hague:—

The heavens teach God to man!—exclaims the prophet. Who that looks at the countless worlds, wheeling unshaken through space, impelled to their eternal gyrations by the potent and yet viewless hands that hurled them first in the boundless void, bidding them pursue, in harmonious regularity, even when they seem to aberrate from their marked orbits, their never-ending evolutions; who, I ask, that has cast a meditating glance on these universes, each of them the centre of a world, and yet, each of them, but a particle, an atom, of the great, infinite universal whole that does not proclaim, with the inspired sage, the heavens teach God to man!—The solid earth, too, with its alternate and beauteous seasons, its immemorial forests, its towering mountains, its gentle, sloping hills, its green valleys, its blooming meadows, yielding to each breeze the treasures of their various and perfumed blossoms. Here, the spreading prairies of the far west, rolling, like this ocean, their flexible undulating grass, as waves tossed about by the winds; there, the ever-barren wastes of Africa—by the side of the fertility that gladdens, the sterility that saddens, the heart—the solemn stillness of yet man-untrodden forest, contrasted with the tumult of busy cities, the abode of industry, the depositories of wealth, the theatre where ambition struts for a day in its empty pageantry—all these, in their turn, teach God to man!—a page, each of them, of that great book of nature, on which stands inscribed an eternal truth, the existence of a First Cause! This wonderful spectacle of universal harmony has another divine impress—it is its never-ending changes of aspect, even when, to us, it would seem that the scenes we behold ought to bear the same features. This glorious orb of day tinging the east—first, with a pale roseate hue, lovely as that which mantles on a virgin's cheeks; then deepening it, at each second, till one half of the heavens is enveloped in a purple and sapphire mantle; and at last emerging in effulgent glory, to light the earth and fructify its bosom—this new sun, dipped in the dew of the morning, it does not resemble that rayless globe, tired of its course, sullied like a wearied traveller by the dust of his long journeying! Is it not owing to these varied and ever-beauteous changes, in every scene of nature, that minds, even the most torpid, are awakened from their intellectual sleep, by the magnificent aspect of a clear summer's day, at the sight of the blue heavens spangled with unnumbered stars? Nor is this ocean mute:—his mighty voice is not less impressive than that of the heavens, and of the earth, in teaching God to man! Here, on the deck of a ship, the most wondrous of man's wonders, we behold, kneeling between the earth and the skies, as many rational beings as would form, on land, the population of a thriving hamlet, sending forth their prayers to the God of the universe—what object, in fact, more fit to impress on man, not the pride, but the ennobling consciousness of his divine origin, than this moving habitation, that conveys him from one world to another! Man has harnessed the fleet winds to this naval car, the steeds for his journeying on the seas. One man with one hand, holds the reins of that rabid courser of the deep, and with ease curbs the wildest waywardness of the giant! A needle, with an unswerving precision, ever-turning to the pole, drawn there by a power which, though invisible, acts with a continuity of force that chains of adamant forged by mortal hands never possessed—this needle, too, teaches God to man! It points to the Deity as unswervingly as it does to the effulgent star of the North: and, in a language which even to the stupid needs no commentary, proclaims that there are things to the undeniable reality of which the most stubborn incredulity must yield assent, though they cannot be seen, felt, or comprehended! Some fragments of glass, a little wood, and a few pieces of worthless brass, have given to men the means of measuring the distances at which the stars are placed in relation to each other, and to the earth! Nay, even time is no longer uncertain and wayward in his flight:—now a captive of man, he turns with regular velocity around the circle marked for him, by genius and art! No deviations are allowed him, but such as the imagination can scarcely conceive, even after science has made them visible, by reducing them to mathematical mensuration! No longer left to the guidance of uncertain conjectures, in pursuing his onward course, the pilot, each day, at each hour, knows his way; can rest the point of his compass on the very spot, over which his fleet vessel stood, the hour that already is passed, and where it will float on that which will follow it. Science has marked his way over the blue waters, "his light-houses" are hung in the skies, and his mile-posts are planted in the heavens!

We say, with an illustrious prelate*—"Let the infatuated votary of a blind chance deride, if he pleases, our credulity; let the cold-hearted Atheist look up for explanation of important events to the mere concatenation of human causes:—to us, the whole universe is loud in proclaiming a Supreme Ruler, who, as he holds the heart of man in his hand, holds also the thread of all contingent occurrences;" and therefore it is that we believe that these discoveries of the secrets of nature are but the accomplishments of wise decrees of Providence. Sometimes, for purposes which wisdom cannot divine, thickens, as it were, the dark veil that covers its mysterious creations, making what have since appeared obvious truths, invisible to the learned; striking the vision of their intelligence, when seeking knowledge, with that blindness which fell on the inhabitants of a guilty city, when, with unhallowed hands, they strove to grasp angels of light. Sometimes, when, to suit its purposes, it gives to man the far-reaching eye of celestial beings, then a Newton elevates man to the skies, or brings down the heavens in communion with the earth. Perhaps—for who can comprehend the ways of God!—these partial visions of things divine, these glimmerings of the great ineffable light allowed to the best, the wisest, the more nobly endowed of the human race, are intended to reveal to mankind their capacity for another existence, where all that have been good and pure will see, feel, and comprehend all that which, to the mass of rational beings, appears for ever involved in impenetrable obscurity, or only perceived by a few master-spirits, through darkness visible. Such a belief, I would fain think, if it be kept within proper bounds, will lead man, not to an excess of pride, when contemplating the conquests he has achieved already on matter and mind; but only to a salutary appreciation of the high purposes of Him that made him thus capable of comprehending such mysteries as those which intelligence has already elucidated, by making him more and more certain of his divine origin. Let him look at himself—the living proof of that consoling truth—the last of the works of God, but the most perfect of all his creations—in size, a worm—in grasping intelligence, a giant—in body, filling in space but an imperceptible speck—in mind, embracing in his potent comprehension, both the visible and invisible universe—an individual, a flower living, as flowers live, the span of a morning—a species, increasing in number, as he increases in knowledge, in experience, in wisdom? Not repeating on the morrow, the instinctive act of yesterday, like his slaves, the brutes; but treasuring up in the archives of reason and memory, the knowledge acquired during each day by each individual; not through perishable oral tradition, as in the infancy of society, but making the remembrance of them as durable as the globe itself, his habitation, by the divine art that has made leaves as countless as those that autumn strew over the yellow fields, the eternal records of eternal truths! Made the most helpless of animals so as to render his conquests over them the more glorious, he has subdued them all, by a moral, not by a brutal force. Not possessing the fleetness of the horse, he has outstripped him in his rapid flight, first, by making the fleetness of the noble animal itself, regulated by art, exceed that which nature, left to itself, gives to the wild horse; and, afterward, taking the winds in his service, imprisoning them, he has been dragged along with unwonted celerity, by their continued and ever-fruitless efforts to free themselves from the net that holds them captive—ever free to advance, but forbidden to recede or fly aside! And, lastly, disdaining the very tempest as sluggish and slow of wings, he seized upon fire—the, till lately, indomitable element—commanding him, with his giant arms, to drag on—prompter than the horse, fleeter than the tempest—here, the cumbrous ship, there, the long train of connected cars! His body undefended either by protecting down, like the bird, or by soft wool, like the sheep—and yet behold him clad in winter in precious robes of sables or ermine—in summer, enveloped in draperies light as mists, woven of a wool gathered from a shrub, softer, finer than that of the Thibet goat, or wrought with threads of golden silks, spun by an unsightly worm, for the use and adorning of this wondrous monarch of the earth!

Where, I ask you, could graver thoughts, meditations more sublime, descend on man, than here, on this vast ocean? There it spreads under your eyes, its azure expanse, unchanged, and the same, ever since God separated the waters from the earth, and during the unnumbered years that have passed away in unrecorded succession of ages, a watery curtain spread by fate as to conceal from the learned curiosity of Egypt's priests, from the subtle inquisitiveness of Greek philosophers, from the covetous, grasping ambition of republican or imperial Rome, regions more wide, climates blessed with softer, milder springs, than the Elysium fancied by their poets; wealth far exceeding that which the Macedonian youth sought over Euphrates and Indus; treasures more ample and inexhaustible than those which Cesar extorted from the Spains and wrested from the Gaul! Why, it is often asked by the unbelievers in an over-ruling Providence, was the discovery of the new continent so long delayed, this reunion of separated brothers, why so long postponed, since we all spring from the same parent stock, and are but severed scions, grown from one and the same original trunk? Why, to speak the language of heathen mythology, was the mourning Ceres allowed, during six thousand years, to wander in fruitless search, of her long-lost *daughter*? Why, presumptuous man! who questions the ends of Providence, and before whom am I summoned to justify the ways of God to man! what useful end could have been obtained (since Providence is wont to prefer human agency to special miracle), what salutary result, I ask you, in my turn, could have been expected had the discovery of America occurred while paganism held in undisputed dominion the fairest part of the inhabited earth, and the most

* See, in Letour's History of the Campaign of New Orleans, Bishop Dubourg's address to General Jackson, on his entering the cathedral at New Orleans, to return thanks to God for the success of the American arms.

civilized portion of human kind? Would these priests of Egypt, the worshippers of an ox, have taught a more rational religion than that professed by the Peruvians? Would those Greeks, whose ancestors had, at no distant period, immolated on the altar of Diana a royal virgin, to sooth the fancied wrath of the virgin goddess, have abolished the human sacrifices offered to the god of war by the Mexicans? would the Romans, themselves the adorers of the sun, have viewed with abhorrence the ceremonies by which the Peruvians saluted the orb of day, when, in their ever-cloudless climate, it emerged from the sea, proud monarch of the skies, gorgeously inwrapped in purple and gold? Would they have stopped the axe of the priest who avenged, by her own blood, the crime of the priestess of the sun who violated her vow of chastity, they, the merciless men who buried alive the fragile vestals? No, my brothers, it was wisely decreed that the mysterious force that draws the magnet to the pole; the art of measuring time with the same exactness as a man measures the length of his staff; the mighty spell that brings down the stars to guide the way of man over the ocean, should have remained unrevealed to Archimedes, undivined by the sagacity of Socrates, undiscovered by the subtile investigation of Plato, unperceived by the eagle-eye of Aristotle himself! Not even to the first Christians, perhaps still sullied by the contamination of recent idolatry, was it given to become the instruments of this great work. More than fourteen centuries elapsed, after the death of Christ, witnessing, in turn, the rise and fall of potent empires. The throes of the earth, in labor to bring forth another world, had at different epochs, been observed, it is true, by some master-spirits, but those omens of a mysterious parturition were dark, uncertain, and contradictory! Some bold Norwegian navigators, it cannot now be denied, had seen the promised land, but they knew not the value of the treasure offered to them. They called it Vine-Land, having observed it covered with the wild grape; and on their return, mixing the marvellous with the true, spoke of grapes that intoxicated with their unfermented juice.

Centuries rolled on, after this transient vision of the so-long-lost half of the earth. The oral tale of the Norwegian sailors, disbelieved by the learned, soon palled even on the curiosity of vulgar contemporaries, and the written narration of the venturous expedition remained buried in the obscurity of some of monastic libraries, where it has but recently been found. It was so willed by Providence. The day fixed for the revelation had not been brought about by revolving years; but man's mind was being made ready for the glad event. Europe, so long groaning under the two-fold oppression of nobles and priests, had begun the long labor of her disinthralment. The Greeks, driven from their country by the cimeter of the Turks, had brought, to the yet rude nations of the west their arts, and the books in which their glorious ancestors still lived and will ever live! The day marked by Providence for the accomplishment of its design had dawned on mankind at last. Nor was the instrument wanting. Genoa, the superb, had given him birth. Like the young Halcyon, he was cradled on the sea, and rocked asleep by the wave. His youth, bold and adventurous; his manhood, stern and unbending; his mind, at the same time given to wild visions of religious enthusiasm, and yet steadily fixed on the sciences that imbody truth and make it visible to the intellect. Columbus unfurled his sail to a propituous breeze. But a gifted writer (an American as it was fit he should be who wrote of this discovery) has told the adventurous voyage. Who, after him, would dare to tread on ground, where his steps are so recent and so deeply impressed? A new world was proclaimed to the astonished habitations of the old world.

How admirable, brothers, the ways of Providence! To that very hemisphere to which, three centuries and a half since, Spain sent the first seed of Christianity and civilization, we are now speeding our way. Some of us return to it, the land of their nativity, again to breathe the pure, the sacred influence of her invigorating clime, of her happiness-working institutions; to retemper on the bosom of that beloved mother a filial love, not obliterated by absence, but longing again for the full fruition of the maternal embrace! Others, ye sturdy and skilful mechanics, who profess those arts that embellish existence, and give additional felicity to social life, you seek, in that powerful republic, a soil, the possession of which is attainable to the humblest means, obtained by labor, and preserved by frugal economy. Others, ye toil-enduring husbandmen, go to procure work in a land where the reward of labor is determined, not by the wealthy to the detriment of the poor, but settled by a just, equitable, voluntary contract, founded on the advantages of both.

Our hearts naturally expand with gratitude as we approach that land, the abode of the free, the sacred asylum of oppressed humanity—the object of the never-dying hatred of the oppressors of every clime—the hope, the solace of the oppressed of every region! Mothers, who now press your babes on hearts palpitating with new and ennobling emotion, as you draw near your new home, your intended adopted country; nurse with more than wonted tenderness the future men of America. Who knows the destiny of these smiling infants, as yet unconscious of the meaning of this solemn invocation of God's name, underthe heavens, and on the bottomless waters! Perhaps this good ship now bears on its decks another Jackson—a future avenger of American wrongs, a redoubtable champion of freedom in coming days! This we know, strangers—brothers, already, and in five years to be hailed as our fellow-citizens, and for this be grateful—that in that land of the free no artificial barrier has been interposed between genius, talents, patriotism, high deeds, and the highest honors that a grateful country can bestow on her free and equal children.

In this hasty and imperfect review of the feelings which the sight of these mighty waters, of the heavens that canopy them, of the noble ship on which we stand, and of the vicinity of the

land toward which we speed, as fast as the winds can bear us along, it were ingratitude to God, from whom all proceed—genius, talent, science, discoveries, as well as the harvests that nourish us, the sun that ripens them, and the dew that makes the earth fruitful—not to speak of those arts, those improvements, by which man, under the smiles of Heaven, has disarmed the seas of their wonted terrors and perils, and made the journeying over them, under the skilful guidance of its noble navigator, safer than crossing the deserts of Africa, on the useful animal so aptly termed the ship of the desert. Unlike the unthinking and the ungrateful, who disdain the good Providence has lavished over them, let us, instead of slandering, as they do, the age we live in, by lauding the age of iron in which fate placed the existence of our less-favored ancestors, let us elevate our hearts to God, in gratitude that it has seemed meet to his wisdom to mark our period of mortal existence on earth in an epoch when the harsher passions have been curbed by Christianity, charity, and philosophy; when the dogs of war, though still panting for slaughter, are held in chains, and made harmless by the wisdom of the rulers of nations—or rather, may I better say, by the wisdom of the nations themselves; when science has penetrated and revealed to the laudable curiosity, even of the unlearned, mysteries of nature that had remained hidden to the greatest of the ancient philosophers. When the world, instead of being parcelled out between a few ruthless tyrants, has been peacefully divided among the only legitimate sovereigns of the earth, the best, the most enlightened of its inhabitants. To one of those master-spirits was assigned the earth itself, not only its green and blooming surface, but its deepest cavities, its very bowels and viscera; the metals, the crystals, the rocks, the precious gems; the gold that represents wealth, and iron, that makes wealth itself—this, prince of the gnome regions, is named *Berzelius!* To another was given all that lives and had lived on the earth, in the seas, rivers, and in the air; the beasts of the forest, the fishes of the sea, the birds of the air, the buzzing insect, the elephant and beaver, with instinct approaching reason, and the polypus with life so torpid as scarcely to exceed that of the vegetable, trees, shrubs, and the deep strata of animal and vegetable fossils—that king of the animate world was named *Cuvier!* Another monarch received, as his portion, an empire of boundless space; he reigns over the stars, marks their course, predicts the day, nay the very minute, when eclipses will frighten ignorant nations, and at what time the very comet which, two thousand years since, appeared to superstitous Rome, the announcement that Cesar would soon be transferred to the heavens, himself a god, will again shake innocuous its fiery mane, and spread harmless its blazing streamers over half the heavens. That emperor of the skies is named *Arago*—and, like the muse of Tasso, wears on his head a star instead of a crown!

Let us bless God, brothers, that we live where no one dare say, under the penalty of being considered insane, that the few were destined, by a law of Providence, to profit by the labors of the many, without any reciprocity of advantage, when the earth, instead of being ravaged, as of old, by the guilty ambition of kings, like a kind mother feeds all the children that cling to her fruitful breast; when the seas, instead of separating, serve but to bring nations nearer together than if the new continent were contiguous to the old.

Such, O God, are our offerings of homage. We know that they will not be tossed away by the buffeting waves, nor blown through space by the tempest, but that, borne up by the potent aspiration of sincere hearts, they will arrive to thee more grateful than the perfume of myrrh and frankincense, more acceptable than the smoke of burning hecatombs.

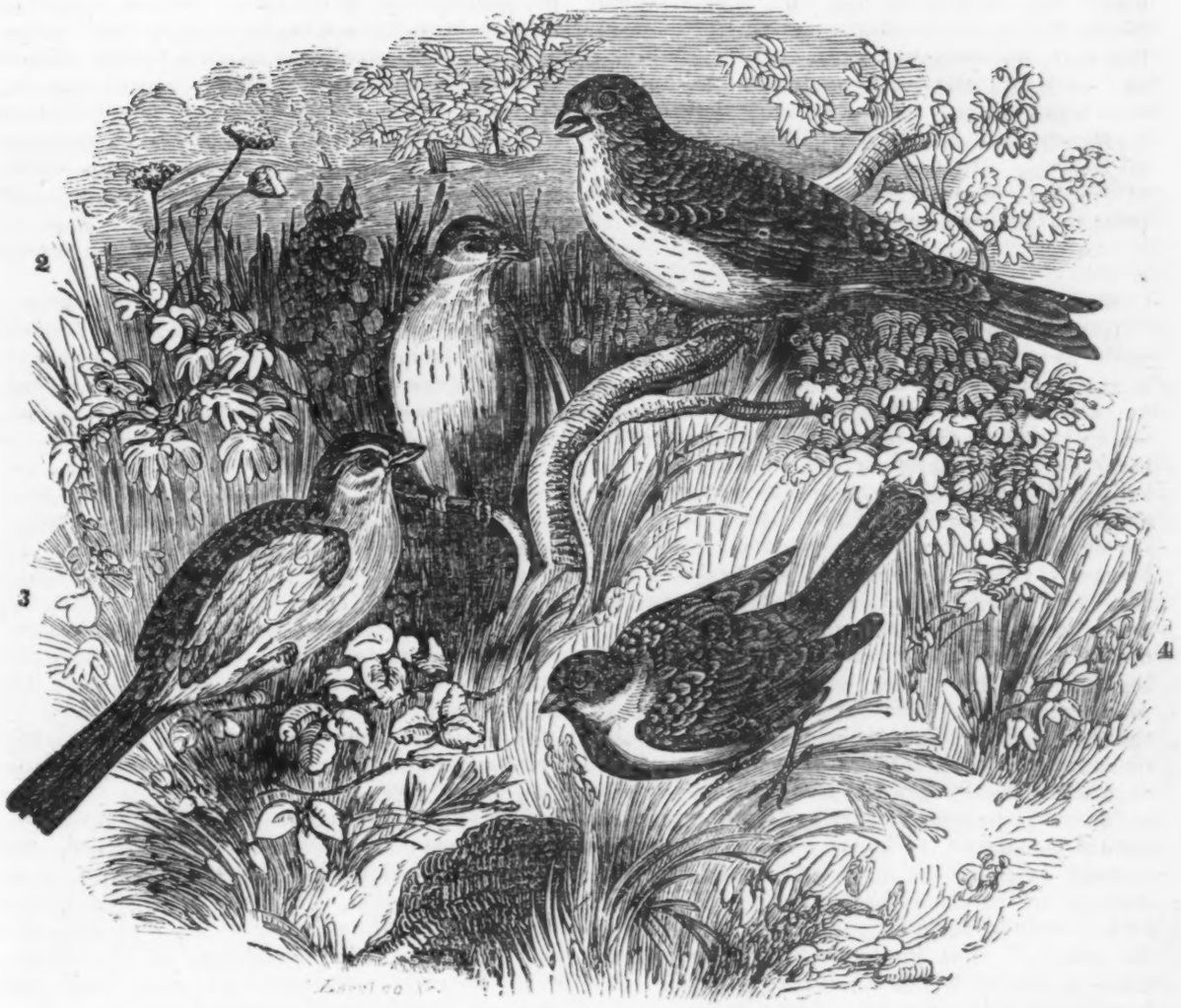
We trust to thy divine protection, to guard us, O God! from all the perils of the winds and of the waves; for we know that the tempests are but the breath of thy nostrils, that all the oceans are held as a drop in the hollow of thy hand, and that, if thy wrath can let loose the tempest that makes the abyss hideous, and toss the waters, like hills shaken by mighty earth quakes, thy will can still the maddened waves, and change the howling winds into a soft breeze, to waft this good ship to its destined port.

GIVE IT TO 'EM.

The following anecdote of the glorious days of seventy-six we do not remember to have met before. The battle of Bunker's Hill had already begun and was raging with fury, when a little spare-faced captain of a company of six volunteers from Concord, N. H., arrived as far as Winter Hill, much fatigued by the day's march and the heat of the day, but still pressing steadily forward. Information being received at headquarters of this reinforcement, an express was immediately sent for them to hurry along, as their assistance was very much needed. The captain thinking to hurry faster might disable his men for action, replied: "Don't think it best to hurry—may be all killed when we get there! On arriving at Charlestown Neck the request was repeated, the lines being in imminent danger; and the captain made the same laconic reply. At length he came up to the scene of action, and bringing his men up square to the line, he pulled off his chapeau, and swinging it in the air, he exclaimed: "Now, my boys, *give it to 'em! give it to 'em! give it to 'em!*"

A St. Louis paper says: "The number of persons who arrived in this county from foreign ports in 1839, was 76,000. Of these, 70,500 were foreigners: 34,000 from Great Britain and Ireland: 19,000 from Germany, and 7000 from France. Of the number, 47,000, arrived at New York, 10,000 at New Orleans, 6,000 at Baltimore, 3,000 at Philadelphia, and 3,000 at Boston. 143 were clergymen, and 154 physician. The number which will be added to our population during the present year, will exceed 100,000. The emigration to this country in the next ten years will amount each year to a number sufficient to constitute a state.

NATURAL HISTORY.



1. Common Bunting. 2. Yellow-hammer, male. 3. Ditto, female. 4. Black-headed Bunting.

BUNTINGS.

In a previous volume we gave an illustration of one of the family of buntings (snow-bunting): we now proceed to a notice of others, common in the woodlands and marshes of both this country and England. The following extract from a British Magazine, describes the English buntings:—

"Five birds of this species are known in Great Britain; but only two are common, the yellow-hammer and the bunting. White says of the common bunting: 'In our woodland enclosed district it is a rare bird;' and beyond this brief notice, his 'Natural History' contains no farther allusion to this bird, which is in fact found almost wholly in corn-growing champaign districts. In winter it generally becomes gregarious, and may be seen in the company of linnets, chaffinches, and other birds. It is often brought to market in winter and sold with larks. Its plumage is brown, and it is considerably larger than any of the family of finches. The note of the bunting is harsh and disagreeable. The yellow-hammer, though not a very interesting, is rather a pretty bird, the head being of a bright yellow, variegated with brown, and the cheeks, throat, and lower part of the breast, are quite yellow. In winter it is common in every hedge. The song of the yellow-hammer consists of little more than a monotone, repeated quickly several times, some emphasis being laid on the last note, which is also uttered at greater length. It is almost the only bird whose note is heard in the heat of a summer's day. The cow-boys in some parts of the country have given the following interpretation to the yellow-hammer's song:—

'A lit—tle bit of bread, and *no* cheese.'

But in Gloucestershire a less vulgar meaning is attributed to its note, which, as it *is* supposed to be addressed to the female, is thus interpreted:—

'Pret-ty, pret-ty, pret-ty *crea*-ture.'

"The reed-bunting, a third variety, frequents marshes, and is rather a handsome bird, with a black head. It occasionly sings during the night. Montagu says that its song 'consists only of two

notes, the first repeated three or four times, the last single and more sharp.' An undeserved reputation as a good songster is given to this bird. The reason is that the sedge-warbler, whose merits as a vocalist are really superior, frequents the same haunts as the reed-bunting; and while the latter bird renders himself prominent when singing, the sedge-warbler utters his liquid pleasant notes concealed from view. The cirl-bunting, which is scarcely found in any part of England except Devonshire, differs but little from the yellow-hammer in form.

LANGUAGE OF BIRDS.

By the term *language*, in reference to birds, we mean sounds which can be mutually understood, excluding the words and phrases which parrots and starlings may be taught by imitation, but to which the birds that repeat them can attach no meaning. An example will best illustrate this, and we do not recollect one more apposite than a circumstance mentioned by Wilson when speaking of the richel bird (*Sterna minuta*). "I lately," he says, "visited those parts of the beach on Cape May where this little bird breeds. During my whole stay, these birds flew in crowds around me, and often within a few yards of my head, squeaking like so many young pigs, which noise their voice strikingly resembles. A humming-bird, that had accidentally strayed to the place, appeared suddenly among this outrageous troop, several of whom darted angrily at him; but he shot like an arrow from them, directing his flight straight toward the ocean. I have no doubt but the distressing cries of the terus had drawn this little creature to the scene, having frequently witnessed his anxious curiosity on similar occasions in the woods." The humming-bird, indeed, is not alone in the exhibition of curiosity to see what is going forward when other birds are vociferous. We recollect having our attention once drawn to the loud scolding of a pair of chaffinches in a copse, a circumstance of very frequent occurrence during summer, but rendered peculiar in the instance in question by the birds darting down almost to the roots of the bushes at some distance from where we stood, from which we concluded their scolding was not directed to us. The loud *pink, pink*, of the chaffinches soon attracted to the spot a crowd of their woodland neighbors, among whom a redbreast took the lead, followed by a greenbird, a songthrush, and about a dozen of the small summer-birds (*Sylviadæ*), all brought together by curiosity to learn what the caffinches were scolding about. From all of these curiosity-hunters giving vent to the same expression of feeling, we concluded that some common enemy had made his appearance among them; and upon looking narrowly into the bushes we perceived a pine-martin (*Martes abietum*, Ray) stealing along, occasionally throwing a sly, or, rather, contemptuous look at his vociferous railers, but otherwise continuing a careful prying search into every hole and bush for a nest of eggs or young, of which he might make a breakfast.

It appears, however, to be a shrewd and correct observation of Mr. Knapp, that the voice of one species of birds, except in particular cases, is not attended by any other species; and he instances the peculiar call of the female cuckoo, which resembles so many contending rivals, but excites no attention generally, inasmuch as the dialect seems to be unknown to all but its own species. He adds: "I know but one note which animals make use of that seems of universal comprehension, and this is the signal of danger; the instant it is uttered, we hear the whole flock, though composed of various species, repeat a separate moan, and away they all scuttle into the bushes for safety."

The latter circumstance, however, is contrary to all that we have ever observed; for, instead of flying from danger, the alarm-call seems to imbolden even the most timid to run every hazard; and, accordingly, it is matter of common observation, that whenever a hawk makes his appearance, the first swallow which descries him sounds the tocsin, when not only all the swallows in the vicinity muster their forces, but many other small birds hurry to the spot, and so far from skulking away out of danger, they boldly face their powerful foe, attacking him fearlessly with beak and wing, till some individual pays the penalty of his temerity. With this exception we can bear testimony to the description of Mr. Knapp being minutely correct. "Some," he adds, "give the maternal hush to their young, and mount to inquire into the jeopardy announced. The wren, that tells of perils from the hedge, soon collects about her all the various inquisitive species within hearing to survey and ascertain the object and add their separate fears. The swallow, that, shrieking, darts in devious flight through the air when a hawk appears, not only calls up all the hirundines of the village, but is instantly understood by every finch and sparrow, and its warning attended to."

Dr. Darwin, in his usual ingenious but fanciful manner, endeavors to show that this language of fear and alarm is (like other sounds usually considered natural) acquired and conventional like human speech. His facts will amuse the reader, while his inferences must appear quite hypothetical and strained. "All other animals," he says, "as well as man, are possessed of the natural language of the passions, expressed in signs or tones; and we shall endeavor to evince that those animals which have preserved themselves from being enslaved by mankind, and are associated in flocks, are also possessed of some artificial language and of some traditional knowledge.

"The mother-turkey, when she eyes a kite hovering high in the air, has either seen her own parents thrown into fear at his presence, or has by observation been acquainted with his dangerous designs upon her young. She becomes agitated with fear, and uses the natural language of that passion; her young ones catch the fear by imitation, and in an instant conceal themselves in the grass.

"At the same time that she shows her fears by her gesture and deportment, she uses a certain exclamation, Koe-ut, Koe-ut, and the young

ones afterward know that the presence of their adversary is denounced, and hide themselves as before.

"The wild tribes of birds have very frequent opportunities of knowing their enemies by observing the destruction they make among their progeny, of which every year but a small part escapes to maturity; but to our domestic birds these opportunities so rarely occur, that their knowledge of their distant enemies must frequently be delivered by tradition in the manner above explained, through many generations.

"This note of danger, as well as the other notes of the mother-turkey, when she calls her flock to their food or to sleep under her wings, appears to be an artificial language, both as expressed by the mother and as understood by the progeny. For a hen teaches this language with equal ease to the ducklings she has hatched from supposititious eggs, and educates as her own offspring; and the wagtails or hedge-sparrows learn it from the young cuckoo, their foster nursling, and supply him with food long after he can fly about, whenever they hear his cuckooing, which Linnæus tells us in his call of hunger. And all our domestic animals are readily taught to come to us for food when we use one tone of voice, and to fly from our anger when we use another."

Those who have attended minutely to the language of fear, alarm, or defiance, among birds cannot fail to have remarked the considerable variety both of notes and intonation in the same species. Thus, as White of Selborne remarks, "when the hen-turkey leads forth her young brood, she keeps a watchful eye, and if a bird of prey appear, though ever so high in the air, the careful mother announces the enemy with a little inward moan, and watches him with a steady and attentive look; but, if he approach, her note becomes earnest and alarming, and her outcries are redoubled." In the instance of a male bird expressing fear or giving an alarm to the hen of the approach of danger near the nest, the tones seem to be varied so as to give her due notice either to keep close and still, or to make her escape with as much caution as she can. "This note," observes Mr. Syme, "is only comprehended by birds of the same species, though we have certainly seen birds of different genera appear as if alarmed by this note of fear sounded by a bird of a different species or genus; but whether it was the note that alarmed them or our presence, we cannot say. But we are pretty sure the notes of parent birds and the chirp of their young are only understood by birds of the same species, or, rather, we should say, some family, for it appears to be a family language, understood reciprocally by parent birds and their young: for the young know the notes of the parents, and the parents those of their own brood, among all the young broods of other birds of the same species in the neighborhood; and this they do as distinctly as the ewe knows the bleat of her own lamb, or the lamb the cry of its own mother, among a large flock. With regard to the note of alarm birds send forth on the approach of their natural enemies, whether a hawk, an owl, or a cat, we consider it to be a general language perfectly understood by all small birds, though each species has a note peculiar to itself. This note differs in sound from the note of fear or alarm given by them when man approaches near their nests. This last seems confined to particular species; but this general alarm note (which is understood by all small birds), we should call their war-whoop or gathering cry, for it is a true natural slogan."

The noisy cackle of jays, the cawing of rooks, and the incessant yelp of sparrows, appear so far as we can judge, to be partly so many social signals for congregating in a particular place, and to be continued after the flock has assembled, either to warn stragglers to what point they ought to wing their way, or, in the spirit of rivalry which prevails so extensively among birds, with the object of outvying each other in loudness of tone. It is remarkable, indeed, that most, if not all gregarious birds are thus noisy, and differ much in this respect from solitary or sub-solitary birds. If a rook or a sea-gull, therefore, is by accident separated from its companions, it will keep up an incessant vociferous call, till a response is returned either from some other straggler or from the colony to which it belongs. The necessity of such a habit as this is still more obvious in the case of those birds which migrate together at night. "Aquatic and gregarious birds," says White, "especially the nocturnal, that shift their quarters in the dark, are very noisy and loquacious; as cranes, wild geese, wild ducks, and the like; their perpetual clamor prevents them from dispersing and losing their companions;" and, accordingly, when residing near a sea or a large river, we have often heard the scream of these night-fliers "startle the dull ear of night."

There appears, however, to be a decided and well-understood distinction between the call of such stragglers as we have just alluded to, and the gathering-cry when an individual has discovered abundance of food. A seamew, or, what is more common, a pair of seamews, may thus be seen far inland, whither they have probably been driven by blowing weather, coursing about high in the air, sometimes flying in one direction, and sometimes tacking about, and all the while uttering at intervals a peculiar call-note; but, even should this occur near the beach, no other seamew would think of coming at the signal. But, on the other hand, the note of intimation proceeding from an individual who has discovered a good fishing-station over a sandbank, is so well understood and so quickly obeyed, that we have repeatedly seen some hundreds of birds hurry to the place in a few minutes, though none were previously observable.

There are instances, however, of birds thus calling when on the wing, which it does not seem so natural to account for on either of these suppositions. We may mention the shrill, harsh scream of the kingfisher and of the dipper (*Cinclus aquaticus*, Bechstein), which, so far as our observation goes, is repeated every time these birds take wing. It may, perhaps, as they are almost always seen in pairs, be meant as a signal-note to the mate, an explanation rendered more

probable by the rapidity of their flight, which carries them in an instant to a great distance along the stream, so that without some such watchcall they might soon be separated. This call is not unlike the sound of a stick drawn rapidly across the uprights of an iron railing, and comes on the ear so quick and transient that it is impossible to catch a view of the bird by trying to follow the sound.

It is ingeniously, and, as we think, correctly remarked by Mr. Knapp, that "as Nature in all her ordinations had a fixed design and foreknowledge, it may be that each species had a separate voice assigned it, that each might continue as created, distinct and unmixed; and the very few deviations and admixtures that have taken place, considering the lapse of time, association, and opportunity, united with the prohibition of continuing accidental deviations, are very remarkable, and indicate a cause and original motive. That some of the notes of birds are a language designed to convey a meaning, is obvious from the very different sounds uttered by these creatures at particular periods; the spring voices become changed as summer advances, and the requirements of the early season have ceased: the summer excitement, monitions, informations, are not needed in autumn, and the notes conveying such intelligence are no longer heard. The periodical calls of animals, croaking of frogs, &c., afford the same reason for concluding that the sound of their voices, by elevation, depression, or modulation, conveys intelligence equivalent to an uttered sentence. The voices of birds seem applicable, in most instances, to the immediate necessities of their condition; such as the sexual call, the invitation to unite when dispersed, the moan of danger, the shriek of alarm, the notice of food."

It was, no doubt, from such views as these that the notion originated of birds being possessed of a language, and of a knowledge of it having been obtained by certain individuals. The faculty of interpreting the language of birds is attributed, in classic fable, to various of the ancient diviners. Apollodorus in his Bibliotheca, relates of Melampus, that he acquired this gift by having had his ears licked by serpents; and that one of the ways by which he chiefly gained a knowledge of futurity, was by listening to what he heard uttered by the birds as they flew over his head. Porphyry, in his book on abstinence from animal food, refers to Empedocles, Plato, and Aristotle, in support of the opinion that all the inferior animals are possessed both of reason and language; and, in addition to Melampus, he mentions Tiresias, Thales, and Appollonius of Tyanæ, as having been able to interpret what they said. This is affirmed to have been one of the gifts bestowed upon Tiresias, in compensation for his blindness, by Minerva. Some of the Jewish rabbins have attributed a similar power to King Solomon. Even as late as the seventeenth century, we find the Irish monk, Bonaventure Baron, in his work in defence of Scotus, speaking of a brother Franciscan, who, he says, understood the language of beasts, and was enabled by that means to foretell coming events. The belief that birds are possessed of a knowledge of futurity, is part of the same notion which has led men to seek indications of what is about to happen in their flight and other movements, and which has given rise both to the ancient vaticination by augury, and to various popular superstitions which still survive. The power of communicating the gift of prophecy inherent in the serpent, was also a prominent article of the mystic creed of antiquity. The Trojan prophetess Cassandra is said to have acquired her art by having been left one night, when a child, together with her twin brother Helenus, in the temple of Apollo, where the two were found next morning with some serpents coiled round them and licking their ears. And Pliny, in his Natural History, tells us that Democritus had mentioned the names of certain birds, whose blood, being mixed together, would produce a serpent of such virtue, that any one who ate of it should understand whatever was said by birds when they conversed together. This story is alluded to by Addison in one of his Spectators.

It were to be wished that all fables in natural history were as obvious to an ordinary reader as this; for we meet with others in books wearing the air of well-ascertained facts, which could only originate in the fancy of the writers. This is exemplified in the story told of the butcher-bird (*Lanius excubitor*), which is said to imitate the voices of other birds, by way of decoying them within his reach, that he may devour them; "excepting this," it is added, "his natural note is the same throughout all seasons; when kept in a cage, even when he seems perfectly contented, he is always mute." We venture to say, however, that nobody will ever be able to authenticate this statement, for the organs of the bird, were there no other obstacle, seem altogether incapable of the variety of modulation which the habit imputed to it would require, though, like most, if not all other birds, this species can express more than one sort of feeling.

Praise.—Praise is usually exaggerated where it is least deserved and there only. The Greeks allowed him who had conquered once at the Olympic games to have his statues made of colossal dimensions; and it was necessary to win three prizes, before being allowed to have the statue made of the size of life. If a man does anything remarkable once, it excites notice; if he repeats it, we soon grow indifferent. If a man sneezes, we say God bless him; but if he repeats it half a dozen times we don't say anything.

I never blame a man who has risen unexpectedly in the world for having a good opinion of himself, for he is very often taken by surprise, and is naturally uplifted when he finds himself a greater character than he supposed he was. Such men remind me of the villages round London, which are gradually absorbed by the growth of the city; and then, forgetting they were once dirty little hamlets, take upon themselves airs as being part of the metropolis. Jean Paul.

ARTS AND ARTISTS.

David dancing before the Ark.—Domenichino.

DOMENICHINO.

Domenichino, or Zampieri (Domenico), a celebrated Italian painter and architect, was born at Bologna, in 1581, and died in 1641, aged sixty. He received his first instructions in the art of painting from Denis Calvart; he afterward became a disciple of the Caracci, and continued in that school for a considerable time. The great talents of Domenichino did not unfold themselves so early in him, as talents much inferior to his have disclosed themselves in other painters. His fellow-pupils, from his slowness, called him the "Ox;" but one of his masters told them, that "this Ox would in time make his ground so fruitful, that painting would be fed by what it produced." This master's works have been justly compared with the Caracci, Nicolo Poussin, and Lionardo da Vinci, in composition and design; and superior to them all in expression of the passions; and in simplicity and variety in the airs of the head, he is allowed to be little inferior to Raffaelle; yet his attitudes are but moderate; his draperies rather stiff, and his pencil heavy. However, as he advanced in years and experience, he advanced in excellence, and the latest of his compositions are the best. The communion of St. Jerome, and the Adam and Eve, are too well known to need a description; and they are universally allowed to be capital works, especially in the expression. Some of the best paintings of this great master are, a Dead Christ, on the knees of the Virgin, attended by Mary Magdalen and others, in the Palazzo della Torae, at Naples; the Martydom of St. Agnes (this was painted as an altar-piece by Domenichino), for the church of St. Agnes, at Bologna. He was also skilful in architecture, and Gregory XV. appointed him his architect.

A SEMINOLE TRADITION.

BY WASHINGTON IRVING.

When the Floridas were erected into a territory of the United States, one of the earliest cares of the governor, William P. Duval, was directed to the instruction and civilization of the natives. For this purpose he called a meeting of the chiefs, in which he informed them of the wish of their Great Father at Washington, that they should have schools and teachers among them, and that their children should be instructed like the children of white men. The chiefs listened with their customary silence and decorum to a long speech, setting forth the advantages that would accrue to them from this measure, and when he had concluded, begged the interval of a day to deliberate on it.

On the following day, a solemn convocation was held, at which one of their chiefs addressed the governor in the name of all the rest.

"My brother," said he "we have been thinking over the proposition of our Great Father at Washington to send teachers and set up schools among us. We are very thankful for the interest he takes in our welfare; but after much deliberation, have concluded to decline his offer. What will do very well for white men, will not do for red men, I know you white men say we all come from the same father and mother, but you are mistaken. We have a tradition handed down from our forefathers, and we believe it, that the Great Spirit, when he undertook to make men, made the black man; it was his first attempt, and pretty well for a beginning; but he soon saw that he bungled; so he determined to try his hand again. He did so, and made the red man. He liked him much better than the black man, but still he was not exactly what he wanted. So he tried once more, and made the white man—and then he was satisfied. You see, therefore, that you were made last, and that is the reason I call you my youngest brother.

"When the Great Spirit had made the three men, he called them together and showed them three boxes. The first was filled with hooks, and maps, and papers; the second with bows and arrows, knives and tomahawks; the third, with spades, axes, hoes, and hammers. "These, my sons," said he, "are the means by which you are to live; choose among them according to your fancy.

"The white man being the favorite, had the first choice. He passed by the box of working tools without notice; but when he come to the weapons for war and hunting, he stopped and looked hard at them. The red man trembled, for he had set his heart upon that box. The white man, however, after looking upon it for a moment, passed on, and chose the box of books and papers. The red man's turn came next, and you may be sure he seized with joy upon the bows and arrows and tomahawks. As to the black man, he had no choice left, but to put up with the box of tools.

"From this it is clear that the Great Spirit intended the white man should learn to read and write; to understand all about the moon and stars; and to make everything, even rum and whiskey. That the red man should be a first-rate hunter, and a mighty warrior, but he was not to learn anything from books, as the Great Spirit had not given him any; nor was he to make rum and whiskey, lest he should kill himself with drinking. As to the black man, as he had nothing but working tools, it was clear he was to work for the white and red man, which he has continued to do.

"We must go according to the wishes of the Great Spirit, or we shall get into trouble. To know how to read and write is very good for white men, but very bad for red men. It makes white men better but red men worse. Some of the Creeks and Cherokees learnt to read and write, and they are the greatest rascals among all the Indians. They went on to Washington and said they were going to see their Great Father, to talk about the good of the nation. And when they got there, they all wrote upon a little piece of paper, without the nation at home knowing anything about it. And the first thing the nation at home knew of the matter, they were called together by the Indian agent, who showed them a little piece of paper, which he told them was a treaty, which their brothers had made in their name, with their Great Father at Washington. And as they knew not what a treaty was, he held up the little piece of paper, and they looked under it, and lo! it covered a great extent of country, and they found that their brethren, by knowing how to read and write, had sold their houses and their lands, and the graves of their fathers; and that the white man, by knowing how to read and write, had gained them. Tell our Great Father at Washington, therefore, that we are very sorry that we cannot receive teachers among us; for reading and writing, though very good for white men, is very bad for Indians."

MONTGOMERY.

Descended from that Montgomery who slew Henri II. of France in a tournament, and belonging to one of the most illustrious families in France, Robert Montgomery early embraced the career of arms. He distinguished himself under the Prince de la Lippe, pupil of the Great Frederick, who displayed so much talent in the defence of Portugal in the Seven Years' War. His regiment having been transferred to America after the peace, he found himself at New York at the commencement of our Revolution. A cause so just as that which raised the English colonies in rebellion, could not fail to awaken all the sympathies of a generous spirit. He abandoned no country of his own in becoming an American. For five centuries the noble sons of Ireland have had no country! A friend of Robert Livingston, and admitted into his family with all that intimacy which revolutions create and cement so precociously between those who devote themselves to a common danger for a common cause, he sought and obtained the hand of Janet Livingston.

The lady of a character worthy of the Rome of the Scipios, had understood better than it was understood by the daughters of the Cesars, all that there is of dignity in the position of the wife who carries with her to the tomb a name illustrious and venerated by an entire nation. Left a widow when still young, she wore for half a century her mourning for her soldier—(it was thus she always named him)—and threw off that attire of gloom only on the eve of the day on which, from the same abode from which she had last beheld him at his parting from her, full of life and hope, she saw passing before her on the Hudson, a steamboat which bore on its deck, overshadowed by twenty star-spangled banners, the mortal remains of her husband.

Clinton, then governor of New York, had thought that the moment had arrived to accomplish a great act of national piety. The British government sympathized generously with the noble idea. These glorious remains, found undisturbed in the tomb where they had been laid half a century before by the English soldiers, were delivered over by the orders of the governor of Canada to the American veterans commissioned to receive them. Transported with a religous pomp to New York, they were deposited in the church of St. Paul, in the cenotaph that had been erected to the warrior's memory.

Thus, when Greece—after avenging at Salamis, at Platæ, at Mycale, the outrages of Xerxes, the conflagration of Athens kindled by the ferocious Mardonious—free, flourishing, glorious, by immortal victories, was not less triumphant in her arts than she had been in her arms, did Pericles gather up the bones of the citizens that fell at Marathon, those sacred bones blanched by sixty winters, and deposite them in a common tomb—honoring the memory of those martyr's to their country's cause, with that eloquence, those inspired hymns, those solemn games, with which Athens repaid the blood shed for her by her brave sons. Democratic Review.

SILVER MINES OF CHIHUAHUA.

Some account of the state of Chihuahua, one of the interior departments of Mexico, was recently communicated in a letter from a merchant of that country published in the Washington Globe. Chihuahua is rich in silver mines. During a period of four years, from 1824 to 1828, a single mine situated on the great chain of mountains to the east of the city of Chihuahua produced more than eleven millions of dollars in silver. But this was a rare product. At present from two to two and a half millions are obtained annually from the mines of this district, the greater portions of them being paralysed on account of the very high price of quicksilver. A large proportion of the precious metal thus yielded is shipped from the ports of Mazatlan and Guaymas, on the Pacific ocean, in exchange for goods brought from England, the rest is exported by the way of Matamoras or some other port on the Gulf of Mexico.

There are six chief mining towns in the department of Chihuahua, in which there are upward of four hundred shafts of mines; the few that are now worked employ from 12,000 to 15,000 workmen. Their duration is said to be incalculable, and as the country is explored more and more, new mines are discovered. It is the opinion of the writer that the application of steam power to the working of the mines would greatly facilitate operations and render the business more profitable. The system of large companies, it is thought, would also be an important improvement in the mode of conducting the business, as at present the mines are mostly in the hands of men of limited means who are not able to undertake a large system of arrangements.

TRANQUILLITY.

One day brings on another day; one year follows another; let us take the time as it comes. The sources of all pleasure are in our heart; he who seeks them elsewhere outrages the divinity. My projects, my desires and my hopes, never go beyond my own bosom. Rivers roll rapidly to the sea, and enter therein without troubling it; my heart is the same; all the events of the great world would not cost me a single care. Truth is my compass and moderation my helm. The clouds arise and the clouds descend in rain without causing me any inquietude. When they conceal the sun from me by day, I try to look at the stars by night. My clothes are made of common cloth, my food is coarse, and the thatch that covers my roof, decays every year. but what would it have been to me to have been dressed in silk to-day, and to have digested costly dishes? Golden roofs do not keep out sleeplessness and care; and were the country shaken by an earthquake, how easy I can gain my humble door! my patrimony is at the end of two arms, and every day gives me its harvest. When it is very hot, I cool myself in the shade of a tree; and when it is very cold, I warm myself by working. Old age is coming upon me, but my children are young, and will repay me for what I have done for them. If they always observe truth and moderation, a hundred years will not cost them a sigh. Whatever tempests may arise, tranquillity is a port always open to the innocent heart. Hail, tranquillity of the soul! Sweet charm of life, kings would sell their crowns to buy thee if they knew thy value. Complete thy benefits; thou hast helped me to live well—help me to die well. Translation of a Chinese poem.

There are no books so hard to write, and so badly written, as books of prayer. The Almighty Ruler is worshipped ten times more meanly than an earthly sovereign, and we express our love for an earthly goddess in far better taste than we do to the Deity. An author sits down and writes prayers to order, as it were, perhaps a morning prayer at evening, or a supplication when he feels glad.

DROWNING OF PRINCE WILLIAM.

LEAVES FROM HISTORY.

DEATH OF PRINCE WILLIAM.

At the time that William Rufus, the second Norman king of Great Britain, was accidently killed while on a hunting excursion, his eldest brother, Robert, who was his lawful successor to the English throne, was in Normandy. His bold and ambitious brother, Henry, took advantage of his absence and prevailed on the people to proclaim him king. As soon as Duke Robert heard of this usurpation, he attempted, though with the most unfounded hopes of success, to gain possession of his rightful inheritance. Henry, well aware that such would be the course his brother would pursue, did not wait his arrival in England; but, preparing a large force, he crossed the channel, penetrated into the very heart of Robert's dominions in Normandy, and forced the weak and pusillanimous duke to bow in submission to his authority. Henry returned home, but had scarcely landed upon the English shore before he heard that his brother, aided by a few discontented English earls, and Louis of France, was again in arms and preparing to avenge the insults he had offered him. Henry immediately returned with a new levy of troops, besieged and took Tinchebray, and after a pitched battle fought between the English and Norman troops in the vicinity of that town, the latter were routed and Duke Robert taken prisoner. He was conveyed to Cardiff castle, in Glamorganshire, where, after suffering close imprisonment and the most cruel treatment for twenty-eight years, he died.

Shortly after the return of Henry to England, in the year 1109, Louis the Gross of France, and the Count of Anjou, entered into a treaty for establishing William, a son of Robert, in possession of his father's dominions. Henry issued an order for the arrest of the young Norman prince; but failing in the attempt, and alarmed at the increasing popularity of the cause of his nephew, he sailed for the continent, and for sometime prosecuted a war with his enemies with alternate success and defeat. Louis and the count at length made proposals for peace, to which Henry assented and immediately returned to England. On his arrival he found the Welsh very troublesome, and attempted to reduce them to submission, but failed on account of their secure retreat to their mountain fastnesses. He was at length compelled to make peace with them.

In order to secure the succession to the throne of his son Prince William, he went over to Normandy in the spring of 1115, and exacted and obtained from the states an oath of fealty to his son. He did the same in England by convening the lords temporal and spiritual, and a large number of the commoners, at Salisbury, when the whole assembly took the required oath.

Once more Louis of France, who was ever ready to harass the English, invested the son of Robert with the dutchy of Normandy, and by promises of his assistance, induced a large number to revolt against their sovereign. Henry immediately marched against and subdued the rebels, and forced Louis into a treaty, by which Gisors, then in the hands of the English king, should be ceded to that monarch. But Henry had hardly left the continent before Louis violated the treaty, captured Gisors, and laid waste the country in that vicinity. Justly incensed at the perfidious conduct of the French king, Henry prepared a formidable armament and determined at all hazards to make permanent peace in his continental domains. Fortunately for his success, his powerful enemy, the Count of Flanders, died about this time; and his other enemy, the Duke of Anjou became his friend and espoused his cause. More surely to secure the support of the duke, Henry made him a large present, and married his son, Prince William, to his daughter.

Louis also made extensive arrangements for a general battle, which took place in the autumn of 1119. The contest was long and severe, and Henry came near losing his life by the hand of a Frenchman named Crispin, who twice wounded him through his helmet; but the king aimed a blow at him and laid him lifeless at his feet. The enemy's line soon after gave way, and the French were completely routed from the field. The pope was at Gisors at this time, and after many mutual remonstrances and concessions, he effected a treaty of peace between the belligerants, by which places taken on both sides were restored, and prisoners released without ransom.

Henry, having settled a firm peace on the continent, prepared to return home. His son, Prince William, paid homage to Louis for the dukedom of Normandy; and the young Norman prince, the son of Robert, was taken under the protection of the French king. Henry sailed for England in the spring of 1120, but the young prince delayed his departure to indulge in intemperate revelries. When he heard his father had gone, he immediately ordered a vessel to be got ready, and made an attempt to overtake him. It was a new ship in which he sailed, belonging to a man named Fitzstephen, who was the one that carried William the Conqueror over some years before in his expedition against Harold the Saxon monarch. Prince William had with him his sister, and a great number of the Norman nobility; and in order to accelerate his speed, he prompted the sailors to exertion by a superabundant supply of spirituous liquors and great promises of reward on reaching England. But his liberality in giving liquor unfitted the sailors to do their duty, and through their neglect, the

ship ran upon a rock with great force. Each one eager to save his own life, seized upon everything calculated to buoy him up, and it was with the greatest difficulty that the prince succeeded in getting into the long boat. He had scarcely left the sinking ship before he heard the cries of his sister, who was struggling in the water. He ordered the sailors to row to her assistance, but the rush of her drowning companions to the boat, overturned it, just as they were lifting her into it with safety. Every one except a butcher of Rouen, was lost. He was picked up by a fisherman the next morning, and relates that the captain, who had clung to the mast all night, on hearing that the prince and his sister were drowned, cried out, "Then let me die too," and immediately sunk. This terrible event is portrayed in our engraving.

For some days the king entertained hopes that his son had by some accident put into a distant port, but when the melancholy fact was made known to him, he fainted; and it is recorded that from that day King Henry *never smiled again!* The following beautiful lines commemorative of this fact, are from the pen of Mrs. Hemans.

The bark that held a prince went down,
The sweeping waves rolled on,
And what was England's glorious crown
To him that wept a son?
He lived, for life may long be borne
Ere sorrow breaks its chain;
Why comes not death to those who mourn?
He never smiled again.

There stood proud forms around his throne,
The stately, and the brave;
But which could fill the place of one?
That one beneath the wave.
Before him passed the young and fair,
In pleasure's reckless train;
But seas dashed o'er his son's bright hair—
He never smiled again.

He sat where festal bowls went round;
He heard the minstrel sing;
He saw the tourney's victor crowned,
Amid the knightly ring.
A murmur of the restless deep
Was blent with every strain;
A voice of winds that would not sleep;
He never smiled again.

Hearts in that time closed o'er the trace
Of vows once fondly poured;
And strangers took the kinsman's place
At many a joyous board.
Graves which true love had bathed with tears,
Were left to heaven's bright rain;
Fresh hopes were born for other's years;
He never smiled again.

If you wish to reform the world, begin by reforming yourself, and then devote your attention to reforming and improving the habits, manners, and principles of the children and youth who are next to come on to the stage of action.

SIR RICHARD ARKWRIGHT.—THE COTTON MANUFACTURE.

We propose now to give some account of an individual, whose rise from a very humble origin to affluence and distinction was the result of his persevering attention to the improvement of the machinery employed in one of the most important branches of manufacture, and whose name is intimately connected with the recent history of the commercial greatness of his country. We allude to the celebrated Sir Richard Arkwright. Arkwright was born December 23, 1732, at Preston, in Lancashire, England. His parents were very poor, and he was the youngest of a family of thirteen children; so that we may suppose the school education he received, if he ever was at school at all, was extremely limited. Indeed, but little learning would probably be deemed necessary for the profession to which he was bred, that of a barber. This business he continued to follow till he was nearly thirty years of age; and this first period of his history is of course obscure enough. About the year 1760, however, or soon after, he gave up shaving, and commenced business as an itinerant dealer in hair, collecting the commodity by travelling up and down the country, and then, after he had dressed it, selling it again to the wig-makers, with whom he very soon acquired the character of keeping a better article than any of his rivals in the same trade. He had obtained possession, too, we are told, of a secret method of dying the hair, by which he doubtless contrived to augment his profits; and perhaps, in his accidental acquaintance with this little piece of chymistry, we may find the germe of that sensibility he soon began to manifest to the value of new and unpublished inventions in the arts, and of his passion for patent-rights and the pleasures of monopoly.

It would appear that his first efforts in mechanics, as has happened in the case of many other ingenious men, was an attempt to discover the perpetual motion. It was in inquiring after a person to make him some wheels for a project of this kind, that, in the latter part of the year 1767, he got acquainted with a clockmaker of the name of Kay, then residing at Warrington, with whom it is certain that he remained for a considerable time after closely connected. From this moment we may date his entrance upon a new career.

The manufacture of cotton cloths was introduced into England only toward the end of the seventeenth century; although stuffs, improperly called Manchester cottons, had been fabricated nearly three centuries before, which, however, were made entirely of wool. It is generally thought that the first attempt at the manufacture of cotton goods in Europe did not take place until the end of the fifteenth century, when the art was introduced into Italy. Before this, the only cottons known had been imported from the East Indies.

The English cottons, for many years after the introduction of the manufacture, had only the weft of cotton, the warp or longitudinal threads of the cloth being of linen. It was conceived to be impracticable to spin the cotton with

a sufficiently hard twist to make it serviceable for this latter purpose. Although occasionally exported, too, in small quantities, the manufactured goods were chiefly consumed at home. It was not till about the year 1760, that any considerable demand for them arose abroad.

But about this time the exportation of cottons, both to the Continent and to America, began to be carried on, on a larger scale, and the manufacture, of course, received a corresponding impulse. The thread had hitherto been spun entirely, as it still continues to be in India, by the tedious process of the distaff and spindle, the spinner drawing out only a single thread at a time. But as the demand for the manufactured article continued to increase, a greater and greater scarcity of weft was experienced, till, at last, although there was fifty thousand spindles constantly at work in Lancashire alone, each occupying an individual spinner, they were found quite insufficient to supply the quantity of thread required. The weavers generally, in those days, had the weft they used spun for them by the females of their family; and now "those weavers," says Mr. Guest, in his History of the Cotton Manufacture, "whose families could not furnish the necessary supply of weft, had their spinning done by their neighbors, and were obliged to pay more for the spinning than the price allowed by their masters; and even with this disadvantage, very few could procure weft enough to keep themselves constantly employed. It was no uncommon thing for a weaver to walk three or four miles in the morning, and call on five or six spinners, before he could collect weft to serve him for the remainder of the day; and when he wished to weave a piece in a shorter time than usual, a new riband or gown was necessary to quicken the exertions of the spinner."

It was natural, in this state of things, that attempts should be made to contrive some method of spinning more effective than that which had hitherto been in use; and, in fact, several ingenious individuals seem to have turned their attention to that subject. Long before this time, indeed, spinning by machinery had been thought of by more than one speculator. A Mr. Wyatt, of Litchfield, is stated to have actually invented an apparatus for that purpose so early as the year 1733, and to have had factories built and filled with his machines, both at Birmingham and Northampton. These undertakings, however, not being successful, the machines were allowed to perish, and no model or description of them was preserved. There was also a Mr. Laurence Earnshaw, of Mottram, in Cheshire, of whom "it is recorded, that in the year 1753, he invented a machine to spin and reel cotton at one operation, which he showed to his neighbors, and then destroyed it, through the generous apprehension that he might deprive the poor of bread;" a mistake, but a benevolent one.

It was in the year 1767, as we have mentioned, that Arkwright became acquainted with Kay. In 1768, the two friends appeared together at Preston, and immediately began to occupy themselves busily in the erection of a machine for the spinning of cotton-thread, of which they had brought a model with them. They had prevailed upon a Mr. Smalley, who is described to have been a liquor merchant and painter of that place, to join them in their speculation; and the room in which the machine was fixed was the parlor of the dwelling-house attached to the free grammar-school, the use of which Smalley had obtained from his friend the schoolmaster. At this time, Arkwright was so poor that, an election contest having taken place in that town of which he was a burgess, it is asserted that his friends or party, were obliged to subscribe to get him a decent suit of clothes before they could bring him into the poll-room. As soon as the election was over, he and Kay left Preston, and, carrying with them their model, betook themselves to Nottingham, the apprehension of the hostility of the people of Lancashire to the attempt he was making to introduce spinning by machinery having, as Arkwright himself afterward stated, induced him to take this step. On arriving at Nottingham, he first made arrangements with Messrs. Wrights, the bankers, for obtaining the necessary supply of capital; but they, after a short time, having declined to continue their advances, he took his model to Messrs. Need and Strutt, stocking weavers of that place, the latter of whom was a particularly ingenious man, and well qualified, from his scientific acquirements, of which he had possessed himself under many disadvantages, to judge of the adaptation of the new machinery to its proposed object. An inspection of it perfectly satisfied him of its great value; and he and Mr. Need immediately agreed to enter into partnership with Arkwright, who accordingly, in 1769, took out a patent for the machine as its inventor. A spinning-mill, driven by horse power, was at the same time erected and filled with the frames; being, unless we include those erected many years before by Mr. Wyatt, the first work of the kind that had been known in England. In 1771, Arkwright and his partners established another mill at Cromford, in the parish of Wirksworth, in Derbyshire, the machinery in which was set in motion by a waterwheel; and in 1775, he took out a second patent, including some additions which he had made to his original apparatus.

In what we have hitherto related, we have carefully confined ourselves to facts which are universally acknowledged; but there are other points of the story that have been stated in very opposite ways, and have given rise to much doubt and dispute.

The machinery for which Arkwright took out his patents consisted of various parts, his second specification enumerating no fewer than ten different contrivances; but of these the one that was by far of greatest importance, was a device for drawing out the cotton from a coarse to a finer harder-twisted thread, and so rendering it fit to be used for warp as well as weft. This was most ingeniously managed by the application of a principle which had not yet been introduced in any other mechanical operation. The cotton was in the first place drawn off from the skewers on which it was fixed by one pair of rollers, which were made to move at a comparatively slow rate, and which formed it into threads of the

first and coarser quality; but at a little distance behind the first was placed a second pair of rollers, revolving three, four, or five times as fast, which took it up when it had passed through the others, the effect of which would be to reduce the thread to a degree of fineness so many times greater than that which it originally had. The first pair of rollers might be regarded as the feeders of the second, which could receive no more than the others sent to them; and that, again, could be no more than these others themselves took up from the skewers. As the second pair of rollers, therefore, revolved, we will say, five times for every one revolution of the first pair, or, which is the same thing, required for their consumption in a given time five times the length of thread that the first did, they could obviously only obtain so much length by drawing out the common portion of cotton into thread of five times the original fineness. Nothing could be more beautiful or more effective than this contrivance; which, with an additional provision for giving the proper twist to the thread, constitutes what is called the water-frame or throstle.*

Of this part of his machinery, Arkwright particularly claimed the invention as his own. He admitted, with regard to some of the other machines, included in his patent, that he was rather their improver than their inventor; and the original spinning-machine for coarse thread, commonly called the spinning-jenny, he frankly attributed in its first conception to a person of the name of Hargrave, who resided at Blackburn, and who, he said, having been driven out of Lancashire in consequence of his invention, had taken refuge in Nottingham; but, unable to bear up against a conspiracy formed to ruin him, had been at last obliged to relinquish the farther prosecution of his object, and died in obscurity and distress.

There, were, however, other parties who had an interest as well as Arkwright in these new machines, and who would not allow that any of them were of his invention. As to the principle of them, the water-frame, they alleged that it was in reality the invention of a poor reed-maker of the name of Highs or Hayes, and that Arkwright had obtained the knowledge of it from his old associate Kay, who had been employed by Highs to assist him in constructing a model of it a short time before Arkwright had sought his acquaintance. Many cotton-spinners, professing to believe this to be the true state of the case, actually used Arkwright's machinery in their factories, notwithstanding the patent by which he had attempted to protect it; and this invasion of his monopoly was carried to such an extent, that at last he found himself obliged to bring actions against no fewer than nine different parties.

The first of these, in which a Colonel Mordaunt was defendant, was tried in the Court of King's Bench, in July, 1781. Upon this occasion, however, the question as to the originality of the inventions was not mooted; the defence taken being the insufficiency of the specification on which the patent had been obtained; and upon that ground a verdict was given in favor of the defendant. On this result Arkwright abandoned the other eight actions he had raised; and instead of attempting any longer to maintain his patent in a court of law, published a pamphlet, containing what he called his "Case," with a view of inducing the legislature to interfere for his protection. It is proper we should here mention that, although the first of these actions in 1781, which decided the fate of the others, thus went off without the real merits of the case having been gone into, yet several of the defendants were prepared to dispute the claim of the patentee to the invention of the machines, and that both Highs and Kay had been summoned to give their evidence upon that point, and were actually in court during the trial of the action against Colonel Mordaunt, the former having been brought over from Ireland, where he was then residing, expressly for the occasion.

Whatever conclusion may be come to on the subject of Arkwright's claim to the invention of the machinery introduced by him into his spinning-factories, it is incontestable that to him alone belongs the merit both of having combined its different parts with admirable ingenuity and judgment, and of having, by his unvaried and invincible perseverance, first brought it into actual use on anything like an extensive scale, and demonstrated its power and value. The several inventions which his patent embraced, whether they were his own or not, would probably, but for him, have perished with their authors; none of whom, except himself, had the determination and courage to face multiplied fatigues and dangers that lay in the way of achieving a practical exemplification of what they had conceived in their minds, or to encounter any part of that opposition, incredulity, ridicule, of those disappointments, repulses, losses, and other discouragements, over all of which he at last so completely triumphed. When he set out on this career, he was poor, friendless, and utterly unknown. We have already stated that, on his coming with Kay to Preston, he was almost in rags; and it may be added, that when he and Kay made application immediately before this to a Mr. Atherton for some pecuniary assistance to enable them to prosecute their plans, Arkwright's appearance alone was enough to determine that gentleman to have nothing to do with the adventure. Can we have a more exciting example, then, of what a resolute heart may do in apparently the most hopeless circumstances? of what ingenuity and perseverance together may overcome in the pursuit of what they are determined to attain? And this is the grand lesson which the history of Arkwright is fitted to teach us: to give ourselves wholly to one object, and never to despair of reaching it. Even after he had succeeded in forming his partnership with Messrs. Need and Strutt, his success was far from being secured. For a long time the speculation was a hazardous and unprofitable one, and no little outlay of capital was required to carry it on. He tells us himself in his Case that it did not begin to pay till it had been persevered in for five years, and had swallowed up a capital of more than twelve thou-

* So called from its having been originally moved by *water* power.

sand pounds. We cannot doubt that it required all Arkwright's dexterity and firmness to induce his partners to persevere with the experiment under this large expenditure and protracted disappointment. But it was the character of the man to devote his whole heart and faculties to whatever he engaged in. Even to the close of his life, the management of his different factories was his only occupation, and even amusement. Although he had been from early life afflicted with severe asthma, he took scarcely any recreation, employing all his time either in superintending the daily concerns of these establishments, which were regulated upon a plan that itself indicated in its contriver no little ingenuity and reach of mind, or adding such improvements to his machinery, from time to time, as his experience and observation suggested. And thus it was, that from a poor barber he raised himself to what he eventually became; not merely to rank and great affluence, but to be the founder of a new branch of national industry, destined, in a wonderfully short space of time, to assume the very first place among the manufactures of his country. A very short review of what the cotton trade now is, as compared with its former state, will show what it owes to Sir Richard Arkwright.

England may be said to have been a manufacturing country for five hundred years; from the time, namely, when the clothiers of Flanders came over in great numbers and settled themselves in different parts of the kingdom, on the marriage of Edward III. to Philippa of Hainault. The manufacture of cotton cloth, however, as we have already noticed, was not introduced until the middle of the seventeenth century, and made no extraordinary progress for a hundred years afterward. As an evidence of the comparatively slight degree of interest which it excited, and of the little ingenuity which was consequently exerted in its improvement, it may be stated that the valuable invention of the fly-shuttle, which was introduced into the woollen manufacture about the year 1738, was not employed in the weaving of cottons till more than twenty years afterward; up to which period, whenever the web was more than three feet wide, two men were constantly stationed at the loom in which it was wrought, the one to throw the shuttle from right to left, and the other to throw it back from left to right. It was not till the year 1769, that an attempt was made upon any considerable scale to spin cotton thread by machinery; for, whatever may have been done before this time by individuals of mechanical ingenuity in inventing contrivances for that purpose, it is certain that the invaluable improvement in question was really introduced into the manufacture by Arkwright when he took out his patent and built his first mill.

The revolution, therefore, we may almost say, in the whole aspect and character of the manufacturing and commercial interests of England which has hence arisen, is the work of only the last sixty years. About the beginning of the last century, the quantity of cotton wool annually imported into Great Britain did not amount to 1,200,000 lbs.; and by the year 1720 it had not increased to much beyond 2,000,000 lbs. There are no returns from 1720 to 1771; but the importation had probably gone on increasing during that interval, although at a slow rate. Nor did it make a very rapid progress even for several years after spinning by machinery was introduced, having from 1771 to 1775 averaged only 4,764,589 lbs., and for the next five years only 6,706,013 lbs. In 1784, the year immediately preceding the final repeal of Arkwright's patent, it amounted to 11,482,083 lbs. That event gave a great impulse to the manufacture, the average importation for the next five years having grown to 25,443,270 lbs. annually. In 1799, it had risen to 43,379,278 lbs., and in 1800, to 56,010,732 lbs. In 1817 it was 124,912,968 lbs., and in 1825, it actually amounted to the immense quantity of 228,005,291 lbs. The average importation of cotton wool into Great Britain may now be stated as considerably exceeding 200,000,000 pounds per annum, or as amounting to fully a hundred times what it was a century ago, and to more than fifty times what it was when Arkwright began to spin.

The whole of this raw material, with the exception of about ten millions of pounds which are used in an unmanufactured state, and from ten to twenty millions which are annually exported, is spun into thread, and mostly wrought into cloth. The Reverend Dr. Cartwright invented his power-loom in 1784; but it is only since the commencement of the present century that weaving by machinery has become general. Steam was first applied as the moving power for the spinning machinery in 1785; in which year Messrs. Boulton and Watt erected one of their rotative engines for a factory belonging to the Messrs. Robinson at Papplewick, in Nottinghamshire. In the present day the cotton is carded, spun, and woven into cloth, in the same manufactory; these different operations being performed by machinery, the several parts of which are all set in motion by a single steam-engine.

In 1787, the number of spinning factories in the country of Lancaster amounted only to 42, of comparatively inconsiderable magnitude; in August, 1825, there were, according to Mr. Baines, no fewer than 104 such factories in Manchester alone, which were worked by 110 steam-engines, of the aggregate power of 3,598 horses. The number of steam-looms now at work in the kingdom is calculated at 45,000, of which about 8,000 are in Scotland, and above 20,000 in Manchester. In 1824, it has been stated that the number of spindles constantly in motion was about six millions, and the power by which they were moved equal to that of 10,572 horses. In another statement, however, drawn up by Mr. Kennedy, it is calculated that in 1817 (when the importation of cotton wool was not nearly so great as in 1824), the number of spindles was 6,645,833, and the moving power equal to that of 20,768 horses. Some idea may be formed of the growth of this manufacture since the year 1769, by contrasting the astonishing number of threads which it would thus appear are spun every day now, with the 50,000 which were all that were produced then.

The produce of all this machinery is, as may

be supposed, immense. "In the present improved state of this (the weaving) process," says the writer of the article already referred to in the Encyclopædia Britannica, "one person, generally a girl, attends to two looms, the weekly produce of which is from seven to nine pieces of cloth, of seven eighths wide and twenty-eight yards long."—"A single factory in Manchester," says Mr. Guest, writing in 1828, "and that not of first-rate magnitude, receives the raw cotton, and turns out a web of cloth, varying in width from three quarters of a yard to a yard and a quarter, of forty miles in length, every week." In 1750, it has been calculated that the whole amount of the cotton manufacture of Great Britain did not exceed the annual value of $1,000,000; it is now considered, on good grounds, to amount to fully one hundred and eighty millions of dollars per annum. Sir Richard Arkwright states in his Case, published in 1781, that the capital then invested in buildings and machinery by those engaged in this trade, amounted to $1,000,000; it is calculated to amount now, in Lancashire alone, which possesses about four fifths of the trade, to $40,000,000. In the year ending on the 1st of May, 1818, 105,000,000 of yards of cotton cloth of all sorts were manufactured in Glasgow and the neighborhood, of which the value was about $26,000,000. Of this about one half was exported. The value of the cotton cloths, twist, and yarn, exported from Great Britain for some years past, has been, on an average, about $90,000,000, leaving, of course, about $100,000,000 worth for home consumption. The export trade in cotton is now fully three times that in woollens, the manufacture of which used to be the great staple of the kingdom.

The extraordinary perfection to which every part of the cotton manufacture has now been carried, is another result for which we are entirely indebted to the introduction of machinery. Especially since the invention of the mule, a compound of the jenny and the water-frame, about the year 1790, the muslins manufactured in England have been every year attaining a greater fineness of fabric, and are now rapidly approaching to a rivalry, even in this respect, with the most exquisite productions of the East. As an illustration of the state of advancement to which the spinning process has been brought, it may be mentioned, that "Mr. John Pollard, of Manchester, spun, in 1792, on the mule, no fewer than 278 hanks of yarn, forming a thread of 233,520 yards, or upward of 132 miles in length, from a single pound of raw cotton." The diminution in the price of the manufactured article which has been produced by the successive improvements in the cotton machinery is equally extraordinary. Yarn of what is called No. 100, which even in 1786, after its price has been greatly reduced by the cancelling of Arkwright's patent, sold for thirty-eight shillings, has fallen in price every year since that time, and is now to be had for three or four shillings. The raw material is now indeed brought from India, and manufactured into cloths in England, which, after being re-exported to that country, are actually sold there cheaper than the produce of the native looms. There can hardly be a more striking proof than this of the triumph of machinery.

Finally, it has been calculated that while the number of persons employed in the cotton manufacture in Great Britain in 1767, did not probably amount to 30,000, the number of those now engaged in its different departments can hardly be less than a million. Yet, "in some branches of the business," it has been stated, "the spinning in particular, such is the economy of labor introduced by the use of machinery, that one man and four children will spin as much yarn as was spun by six hundred women and girls fifty years ago."

WASHINGTON IN THE FIELD OF VICTORY AND CHAMBER OF DEATH.

From Custis's Recollections of Washington, we copy the following, relating to the siege of Yorktown, and a domestic scene:—

The weather during the siege of Yorktown was propitious in the extreme, being, with the exception of the squall on the night of the sixteenth, the fine autumnal weather of the south, commonly called the Indian summer, which greatly facilitated the military operations. Washington's headquarters were under canvass the whole time.

The situation of Yorktown, after the surrender, was pestilential. Numbers of wretched negroes who had either been taken from the plantations, or had of themselves followed the fortunes of the British army, had died of the small-pox, which, with the camp-fever, was raging in the place, and remained unburied in the streets. When all hope of escape was given up, the horses of the British Legion were led to the margin of the river, shot, and then thrown into the stream; the carcasses, floating with the tide, lodged on the adjacent shores and flats, producing an effluvia that affected the atmosphere for miles around. Indeed, it was many months before Yorktown and its environs became sufficiently purified to be habitable with any degree of comfort.

A domestic affliction threw a shade over Washington's happiness, while his camp still rung with shouts of triumph for the surrender of Yorktown. His step-son, to whom he had been a parent and a protector, and to whom he was fondly attached, who had accompanied him to the camp at Cambridge, and was among the first of his aids in the dawn of the Revolution, sickened while on duty as extra aid to the commander-in-chief, in the trenches before Yorktown. Aware that his disease, the (camp-fever) would be mortal, the sufferer had yet one last lingering wish to be gratified, and he would die content. It was to behold the surrender of the sword of Cornwallis. He was supported to the ground, and witnessed the admired spectacle, and was then removed to Eltham, a distance of thirty miles from camp.

An express from Dr. Craik announced that there was no longer hope, when Washington, attended by a single officer and a groom left the

headquarters at midniht, and rode with all speed for Eltham.

The anxious watchers by the couch of the dying were, in the gray of twilight, aroused by a trampling of horse, and looking out, discovered the commander-in-chief alighting from a jaded charger in the court-yard. He immediately summoned Dr. Craik, and to the eager inquiry: "Is there any hope?" Craik mournfully shaking his head, the general retired to a room to indulge his grief, requesting to be left alone. In a little while the poor sufferer expired. Washington, tenderly embracing the bereaved wife and mother, observed to the weeping group around the remains of him he so dearly loved: "From this moment I adopt his two youngest children as my own." Absorbed in grief he then waved with his hand a melancholy adieu, and, fresh horses being ready, without rest or refreshment, he remounted and returned to the camp.

For a great distance around Yorktown, the earth trembled under the cannonade, while many an anxious and midnight watcher ascended to the housetops to listen to the sound, and to look upon the horizon, lighted up by the blaze of the batteries, the explosions of the shells, and the flames from the burning vessels in the harbor.

At length, on the morning of the seventeenth, the thundering ceased, hour after hour passed away, and the most attractive ear could not catch another sound. What had happened? Can he have escaped? To suppose he had fallen, was almost too much to hope for. And now an intense anxiety prevails; every eye is turned toward the great southern road, and the express! the express! is upon each lip. Each hamlet and homestead pours forth its inmates. Age is seen leaning on his staff, women with infants at the breast, children with wandering eyes, and tiny hands outstretched, all, all, with breathless hopes and fears, await the courier's coming. Ay, and the courier rode with a red spur that day; but had he been mounted on the wings of the wind, he could scarcely have kept pace with the general anxiety.

At length there is a cry—He comes! he comes! and merging from a cloud of dust a horseman is seen at headlong speed. He plies the lash and spur; covered with foam, with throbbing flank, and nostril dilated to catch the breeze, the generous horse devours the road, while ever and anon the rider waves his cap, and shouts to the eager groups that crowd his way, "Cornwallis is taken!"

And now rose a joyous cry that made the very welkin tremble. The tories, amazed, confounded, shrunk away to their holes and hiding-places, while the patriotic whigs rushed into each other's arms, and wept for gladness. And oh! in that day of general thanksgiving and praise, how many an aspiration ascended to the Most High, imploring blessing on him whom all Time will consecrate as the Father of his Country.

The prediction of Cornwallis in the tent of Washington was verified. The sixteenth of October, 1781, was indeed the crowning glory of the war of the Revolution; hostilities languished thereafter, while Independence and Empire dawned upon the destinies of America, from the surrender of Yorktown.

CHILDHOOD AND ITS VISITERS.

BY E. L. BULWER.

Once on a time, when sunny May
  Was kissing up the April showers,
I saw fair Childhood hard at play
  Before a bank of blushing flowers.
Happy—he knew not whence or how;
  And smiling—who could choose but love him?
For not more glad than Childhood's brow,
  Was the gay heavens that laughed above him.

Old Time came hobbling in his wrath,
  And that green valley's calm invaded;
The brooks grew dry beneath his path,
  The birds were mute, the lilies faded;
A Grecian tomb stood full in sight,
  And that old Time began to batter,
But Childhood watched his paper-kite,
  Nor heeded he, one whit, the matter.

With curling lip, and eye askance,
  Guilt gazed upon the scene a minute;
But Childhood's archly simple glance
  Had such a holy spell within it,
That the dark demon to the air
  Again spread forth his baffled pinion,
And hid his envy and despair,
  Self-tortured in his own dominion.

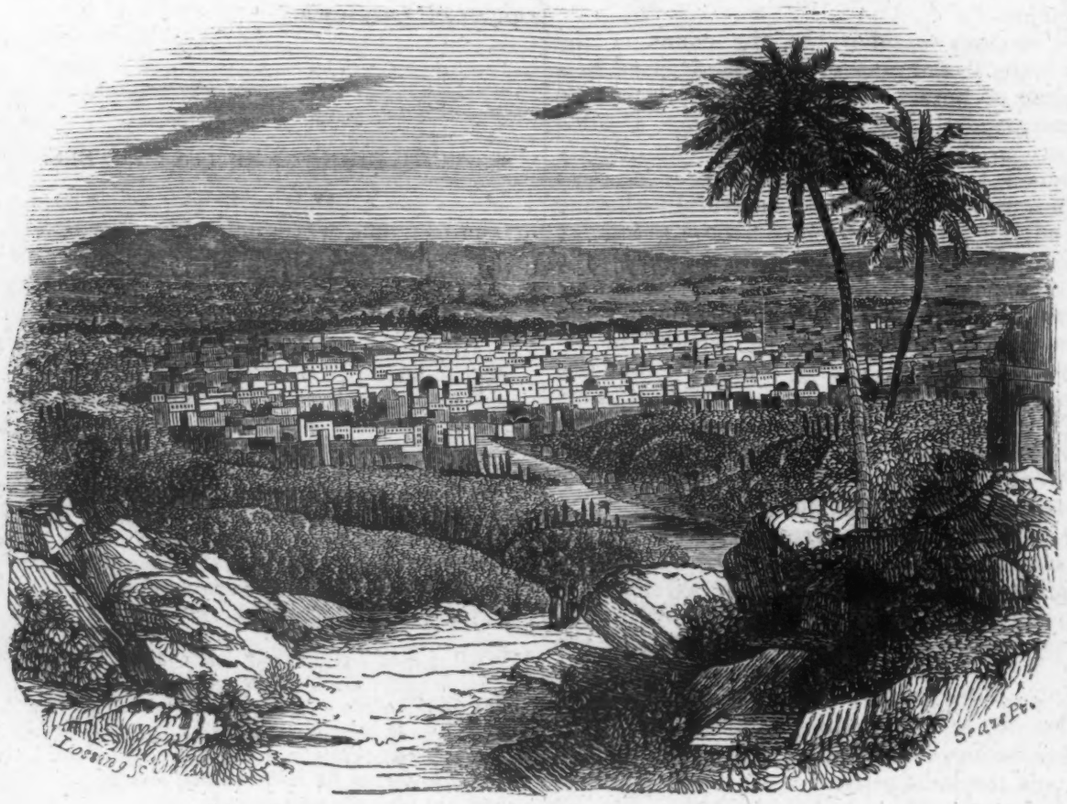
Then stepped a gloomy phantom up,
  Pale, cypress-crowned, night's woful daughter,
And proffered him a fearful cup,
  Full to the brim of bitter water;
Says Childhood: "Madam, what's your name?"
  And when the beldame muttered "Sorrow"—
Then cried: "Don't interrupt my game:
  I prithee, call again to-morrow."

The muse of Pindus thither came,
  And wooed him, with the softest numbers,
That ever scattered wealth and fame
  Upon a youthful poet's slumbers;
Though sweet the lyre and sweet the lay,
  To Childhood it was all a riddle;
"Good gracious!" cried he, "send away
  That noisy woman with a fiddle!"

Then Wisdom stole his bat and ball,
  And taught him, with most sage endeavor,
Why bubbles rise, and acorns fall,
  And why no toy may last for ever;
She talked of all the wondrous laws,
  Which nature's open book discloses;
But Childhood, when she made a pause,
  Was fast asleep among the roses.

Sleep on! sleep on! Pale manhood's dreams
  Are all of earthly pain or pleasure;
Of glory's toils, ambitious scheme,
  Of cherished love or hoarded treasure;
But to the couch where Childhood lies,
  A pure, unmingled trance is given,
Lit up by rays from seraph's eyes,
  And glimpses of remembered heaven!

Look at your own bad passions, and you need not go into society to know mankind—for you have seen the world.



View of the city of Damascus.

DAMASCUS.

Damascus may be truly considered one of the oldest cities in the world, as we see it mentioned in the Book of Genesis, as the birth-place of Eliezer, the steward of the patriarch Abraham. It has the proud distinction, too, above all other cities, of being comparatively *unchangeable*; for through all time, it has been in a flourishing condition, beautiful in its exterior, and noted for activity within. It is situate in the northwest part of a level plain, which extends to the eastward beyond the reach of sight, but is bounded on all sides by mountains, whence flow pure streams of water that render the plain exceedingly fertile. The city stands in the midst of well-watered gardens and orchards, which occupy a circumference of about twenty-five miles, and make the city appear as if it stood within a vast wood. The town is decorated with a great number of mosques and other public buildings, whose domes and minarets make a beautiful appearance at a distance. The finest of these public buildings is a grand mosque of the Corinthian order, said to have been built as a Christian church by the emperor Heraclius. It was dedicated to St. John the Baptist; and the Turks call it the mosque of St. John, believing that at some future time Jesus shall descend and sit thereon, and command all his followers to embrace the Moslem faith.

The ancient city had a wall of sun-dried bricks, but it has fallen into decay, and the modern city is quite as extensive without as within this wall. The houses in the city have flat roofs, and those in the suburbs have domes. There are five hundred splendid mansions or palaces in the city; and so beautiful is the general appearance of Damascus, that it is highly extolled for its splendor, throughout the East. This remark applies to the interior of the courts and dwellings, for, next the street, they chiefly present a squalid appearance. The same fear of displaying wealth that influences the people of Cairo and other places in the pacha's dominions, in the construction of the public entrance to their dwellings, operates powerfully here; for it is dangerous to permit the government to become cognizant of the fact that a citizen is possessed of immense wealth, as it would render him liable to become the victim of the cupidity and avarice of the government officers. It is frequently the case that an entrance of the most miserable appearance, leads to courts paved with marble and refreshed with gushing fountains of pure water.

Damascus contains a population of about one hundred and forty thousand; of whom ninety thousand are native Syrians, ten thousand Turks, fifteen thousand Jews, and twenty-five thousand Christians. It is the great rendezvous for the caravans of pilgrims who move in a mass to Mecca every year, to worship. These pilgrims frequently make their journey answer a religious and commercial purpose, and go to Damascus

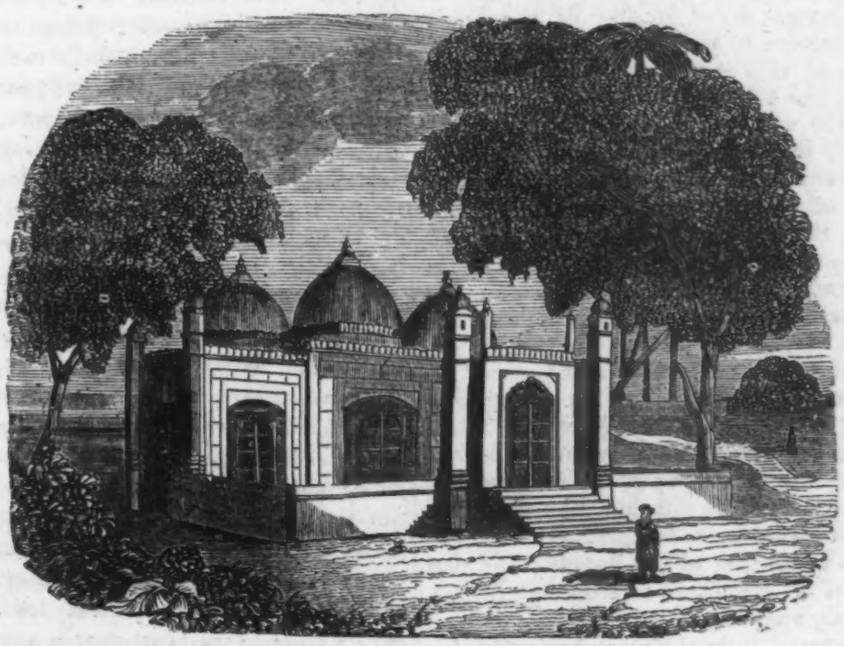
with large quantities of the produce of their respective countries, to exchange for the productions of others. This, and the caravan trade with the ports of the Mediterranean on the west, and Bagdad on the east, contributes greatly to the wealth and prosperity of Damascus. It is also celebrated for its manufactories of silk stuffs, fine cutlery, swords, &c.

In the time of King Solomon, Damascus first became the capital of an independent kingdom (Syria), which was ultimately annexed to the empire of Assyria. Afterward, with the rest of Western Asia, it passed to the Greeks, then to the Romans, and finally to the Arabians, under whom Damascus became the capital of the khaliphat. During the middle ages, when nearly all the empires of the old world changed masters, it experienced many changes, and, with all Syria, it was finally conquered by Sultan Selim. In the war between the Porte and the present pacha of Egypt, Damascus was taken by the troops of the latter, under his son Ibrahim, and is still subject to his authority.

Much has been said recently concerning Mehemet Ali, the pacha of Egypt, and the policy of wresting from him the power he has gained by usurpation. On one side it is urged that the advancement of civilization, of Christianity, and the general prosperity of nations, requires an effort on the part of the European governments to take his kingdom from him and restore it to his master, the sultan of Turkey; while on the other hand, it is argued that his enterprise and public spirit are raising Egypt and Syria from that degradation in which they have so long slumbered, and that he should be acknowledged one of the great benefactors of the age. As appropriate to our subject we will conclude by a view of the social and political condition of these countries, under their present master, written by an eyewitness. Many will doubtless disagree with the conclusions of the writer.

"The boasted civilization which Mehemet Ali has introduced into the countries under his sway, is entirely superficial, and has no origin whatever in any real improvement or amelioration in the condition or for the benefit of their respective populations.

"In Egypt the whole of the land belongs to the pacha; beside himself there is no landed proprietor, and he has the absolute monopoly of everything that is grown in the country. The following is the manner in which it is cultivated; portions of land are divided out between the fellahs of a village, according to the numbers; seed, corn, cotton, or other produce is given to them; this they sow and reap, and of the produce 75 per cent. is immediately taken to the pacha's depots. The remaining 25 per cent. is left them, with, however, the power to take it at a price fixed by the pacha himself, and then resold to them at a higher rate. This is generally done, and reduces the pittance left them about five per cent. more; from this they are to pay the capitation tax, which is not levied according to the real number of the inhabitants of a village, but according to numbers at which it is rated in the government books; so that in one instance with which I was acquainted a village originally rated at 200, reduced by the conscription to 100, and by death or flight to 40, was still obliged to pay the full capitation; and, when I went there, 26 of the 40 had been just bastinadoed to extort from them their proportion of the sum claimed. After the capitation comes the tax on the date-trees, raised from 30 to 60 paras by the pacha, and that of 200 piasters a year for permission to use their own water-wheels, without which the lands situ-



A Mosque, or Moslem Church.

ated beyond the overflow of the Nile, or too high for it to reach, would be barren.

Then comes an infinity of taxes on every article of life. Next to the taxes comes the *corvee* in the worst form, and in continual action; at any moment the fellahs are liable to be seized for public works, for the transport of the baggage of the troops, or to track the boats of the Government or its officers, and this without pay or reference to the state of their crops.

When Mehemet Ali made his famous canal from Alexandria to the Nile, he did it by forcibly marching down 150,000 men from all parts of the country, and obliging them to excavate with their hands, as tools they had not, or perhaps could not be provided. The excavation was completed in three months, but 30,000 men died in the operation. Then comes the curse of the conscription, which is exercised in a most cruel and arbitrary manner, without any sort of rule or law to regulate it. An order is given to the chief of a district to furnish a certain number of men; these he seizes like wild beasts wherever he can find them, without distinction or exemption, the weak as well as the strong, the sick as well as those in health; and as there is no better road to the pacha's favor, than showing great zeal in this branch of the service, he if possible collects more even than were demanded. These are chained, marched down to the river, and embarked amid the tears and lamentations of their families, who know not that they shall probably ever see them again; for change of climate, bad treatment, and above all, despair, cause a mortality in the pacha's army beyond belief; mutilation is not now considered an exemption, and the consequence of the system is, that from Assouan, at the first cataract, to Aleppo, you, literally speaking, never see a young man in a village; and such is the depopulation, that if things continue as they now are, for two years more, and the pacha insists on keeping up his army to its present force, it will be utterly impossible for the crops to be got in, or for any of the operations of agriculture to be carried on.

The whole of this atrocious system is carried into effect by the cruelest means—no justice of any sort for the weak; no security for those who are better off; the bastinado and other tortures applied on every occasion, and at the arbitrary will of every officer of the Government. In addition to this, the natives of the country are rarely employed—never in offices of trust—and the whole Government is intrusted to Turks. In short, the worst features of the Mameluke and Turkish rules are still in active operation; but the method of applying them is much more ingenious, and the boasted civilization of Mehemet Ali amounts to this—that being beyond doubt a man of extraordinary talents, he knows how to bring into play the resources of the country better than his predecessors did, but, like them, entirely for his own interest, and without any reference to the well-being of the people; and that with the aid of his European instruments, he has, if I may say so, applied the screw with a master hand, and squeezed from the wretches under his sway the very last drop of their blood.

Such is the state of these two countries. Syria is, perhaps, the worst of the two; for the Egyptians used to oppression bear it without a struggle; while the Syrians, who had been less harshly treated in old times, writhe under and gnaw their chains.

POLITICAL ECONOMY.

We regret the necessity that compels the author of the interesting series of papers on Political Economy, which have appeared in the current volume of the Magazine, to bring them abruptly to a close; but we hope his engagements may not prevent him from resuming them at an early day. The subject is one of great importance; one in which every man is more or less interested. Much of the salutary influence of statesmen, and the permanent prosperity of our country depends upon proper conceptions of the correct principles of political economy; and nothing can with more efficiency break down the prejudices and jealousies of different commercial countries, make the interests of nations assimilate, and form the civilized world into one great compact of brothers, laboring for the greatest good of the greatest number, than a general diffusion of correct information in relation to the orthodox doctrines of political economy.

This subject, as a distinct jurisprudential science, is yet in its youth, for it is scarcely two centuries since it assumed a tangible form and claimed the serious attention of the wisest statesmen. It was not until the fetters of the feudal system were entirely destroyed, and the great doctrines of democracy began to make successful head against the powerful influence of baronial strength, and political, religious, and commercial monopolies, that this subject assumed an importance sufficient to attract the attention of legislators. But when the banner of social and political reform was unfurled, and the earth came to be regarded as a great common for the exertions of a thrifty people, instead of a collection of manors for the use of the few, then legislators began to form systems of political economy in conformity with the progress of such reformation.

Among nearly all nations of antiquity, almost every kind of manual labor, except agriculture, was regarded as degrading, and fit only to be performed by slaves. Lycurgus enjoined the Spartans not to engage in degrading employments, but to leave such labor to the Helots; and the philosophers of Greece and Rome always spoke of the workshop with the greatest contempt. Cicero even advanced the most puerile sophistry to prove that the noble Democritus did not contrive the

first arch, or that Anacharsis disgraced himself by constructing a potter's wheel! Agriculture alone was esteemed and encouraged; and when the active warriors of Rome laid down the helmet and spear, and sought retirement and repose, they retired to the fields, and found at the plough a pleasing and honorable retreat from the din of arms and the turmoils of the affairs of state.

When the Roman empire crumbled, and hope delighted in the prospect of a new and better state of things that should arise from its ruins, the same disgust for manual labor, other than the exercise of arms, and the toils of the chase, existed; and even had there been a disposition on the part of philanthropists to elevate the character of labor, the deluge of northern barbarians that broke over western Europe, prevented even a proper cultivation of the fields, and all minds were turned to the absorbing topic of war, and all hands to its sanguinary pursuit. The lands fell into the hands of a few, the laws of primogeniture were established, and the accursed feudal system, destructive alike to national and individual prosperity, bore iron rule. Even literature was monopolized by a few (the clergy), and for successive centuries, all learning was employed in polemical theology, or a blind race after the unsubstantial creations of metaphysics. Among all the men renowned for their learning, who flourished from the sixth to the twelfth century, scarcely one is to be found who employed his genius in inquiring into the sources of national wealth, or the means of advancing the physical welfare of mankind. The ordinary business of life—the foundation on which true national greatness is predicated—was too insignificant in their estimation, to engage their attention and draw their minds down from the elevated pursuits of logic, polemical theology, and metaphysics!

But some of the evils of the feudal system were the instruments which wrought a radical change in this respect. This system gave to the barons power and physical force, by means of their retainers, greater, in many instances, than the princes of the different kingdoms. This increasing power inclined the princes to grant privileges and immunities to the inhabitants of cities, as the price of their allegiance, and a claim to their support against the inroads of the barons. This security encouraged traders to extend their operations, commerce expanded its wings, and the several arts, brought into notice through the medium of those great military expeditions among the enlightened Saracens, called the Crusades, were encouraged. Merchants arose to eminence in the state, markets were opened, the productions of different portions of a kingdom, or of different kingdoms were exchanged, and civilization and the increase of national wealth went hand in hand. But this change was very gradual; and it required the lapse of centuries to effect this radical reform in the social system. Chivalry, that power that broke the feudal fetters, expanded the nobler faculties of the human soul, and infused new life and vigor into social life, had worked its mighty miracles, arisen to the acme of glory, and faded away before the more brilliant and benign light of true philosophy and pure religion, before this great change was effected. But when commerce and the arts were discovered to be co-workers in the augmentation of national wealth, men of genius, prompted by the love of gain as well as patriotism, began to enquire into the *cause* of the happy *effect*, so apparent, and by an analysis of wealth collected together the materials of which the science of political economy is formed. In Italy, Spain, Great Britain, and other European countries, pamphlets from time to time appeared recommending various systems for the augmentation of national wealth. But these were so adverse in their proposed modes of operations, that many general evils grew out of the partial good which their various recommendations produced. The great error that money, or rather the precious metals in the form of coin, constitute the basis of national wealth, was apparent in all their systems. But this matter has been so fully commented upon by our correspondent, that we deem it unnecessary to repeat here, the arguments which prove the fallacy of this opinion.

In England this error, or rather the restrictions upon the exportation of coin, was firmly combated by that great monopoly, the East India company. But while self interest urged them to argue in favor of the exportation of the precious metals, which were essentially necessary to their successful trade with the East, they did not seem to possess the knowledge, or sagacity, or strength of nerve, to arraign, as erroneous, the then prevailing doctrine that *money* constituted national wealth, else this conquest would have been more easy and facile. Their arguments, however, were so plausible that it was not long before the restraints upon the exportation of the precious metals were taken off, and the attention of government turned to a method of bringing about an advantageous foreign trade. High duties, special privileges, &c., were brought to bear upon commerce, and with these fetters around it, a spirit of exclusiveness, highly pernicious and unjust, prevailed; and it was not long before the economists of the day perceived a radical error in their system, which made them, in a measure, mistrust the utility of the science. Taking advantage of this embarrasment on the part of the friends of the prevailing system, its enemies commenced their attacks with renewed vigor, and rendered it difficult for government to determine what course was right.

While these discussions were going on in England, an opposite system became popular in France. M. Quesney, a physician of the time of Louis XV., was led, by the depressed state of agriculture in that country, to make a systematic analysis of wealth; and the result of his investigations was a conclusion that the earth is the only source of the production of wealth. He observed that of all classes engaged in industry, "those who cultivated the soil were alone able to pay rent for the mere use of natural agents, or to realize from their products, a net surplus above the cost of production." He allowed other classes to be useful in conducting the affairs of society, but denied that they produced wealth or value, because the value accruing from manufacturing or transporting their products only replaced the original capital they consumed in the operation. He therefore divided the community into three classes—the proprietors of the soil; the cultivators; and the mechanics and tradesmen; and insisted that the cultivators of the soil were the only producers of the wealth of a nation, while the owners of the soil, were auxiliaries in that production. In accordance with this theory, he proposed that the owners and cultivators, who were the only ones that made a real net profit, should pay the taxes. This proposition became quite popular, and was finally put in practice by government. But this system, was equally erroneous with that of the English, and it was not till the advent of Adam Smith in 1776, that a true system of political economy was revealed. His great work on the Wealth of Nations opened a new and consistent theory to the world, not entirely void of errors, but so nearly correct, that all subsequent writers on this subject have made it the foundation stone whereon they have built up their systems. The most important doctrines promulgated by that great writer, have been so ably discussed by our correspondent, that we shall not here recapitulate them. He has written and published an elementary work on the subject which contains the gist of the doctrines, arguments and deductions of Smith, Malthus, Ricardo, Wayland, &c., arranged in a popular form. This little work we would recommend to those desirous of obtaining a general knowledge of the principles of political economy and have not the leisure to study the larger works of the writers just mentioned.

SOCIAL ECONOMY OF A BEE-HIVE.

A hive consists of the queen, or mother-bee, the workers, varying in number from 10,000 to 20,000, or 30,000, and the males or drones from 700 to double that number.

The queen is the parent of the hive; and her sole province and occupation consists in laying the eggs, from which originate those prodigious multitudes that people a hive, and emigrate from it in the course of the summer. In the height of the season her fertility is truly astonishing, as she lays not fewer than 200 eggs per day, and even more when the season is particularly warm and genial, and flowers are abundant; and this laying continues, though at a gradually diminishing rate, till the approach of cold weather in October.

An opinion has been entertained that the queen is followed in her progress through the hive by a number of her subjects formed in a circle round her, and these, of course, have been regarded as the queen's body-guards. The truth is, however, that her bee-majesty has no attendants, strictly speaking; but wherever she moves, the workers whom she encounters in her progress constantly and hurriedly clear the way before, and all turning their heads toward their approaching sovereign, lavish their caresses upon her with much apparent affection, and touch her softly with their antennæ; and these circumstances which may be observed every hour in the day, have given rise to the idea of guards. On one occasion we gave her subjects an opportunity of testifying their courage in her defence, as well as their affection and zeal. Observing her laying eggs in the comb next to the glass of the hive, we gently but quickly opened the pane, and endeavored to seize her. But as soon as the removal of the glass afforded room—(while shut it was almost in contact with her back)—and, before we could accomplish our purpose, they threw their bodies upon her to the number of at least a hundred, and formed a cone over her of such magnitude, that she could not be less than two inches distant from any part of the surface. We dispersed the mass with our finger, and got hold of her precious person, and kept looking at her for some minutes before we restored the captive to her alarmed defenders. It is remarkable that this violence was not resented by them; though they coursed over our hands in scores, while we kept hold of their mistress, not one individual used its sting. The all-engrossing object was the queen.

The mutual aversion of queens is a strikng feature in the natural history of this insect. Their mutual enmity may be said to be an inborn disposition with them; for no sooner has the first of the race on a hive about to throw off a second swarm, escaped from her own cradle, than she hurries away in search of her rivals, and exerts herself with the utmost eagerness to destroy them.

The workers, to the number of 10,000, 20,000, and even 30,000, constitute the great mass of the population, and on them devolve the whole labors for the establishment. Theirs is the office of searching for and collecting the precious fluid which not only furnishes their daily food, as well as that of their young, and the surplus of which is laid up for winter stores, but also the materials from which they rear their beautiful combs. In the little basket shaped cavity of their hind legs they bring home the pollen or farinaceous dust of flowers, kneaded by the help of the morning dew

into tiny balls, which forms an important ingredient in the nourishment of the brood; and also the propolis or adhesive gum extracted from willows, &c., with which they attach their combs to the upper part and sides of the hive, and stop every crevice that might admit the winter's cold.

The natural term of the worker's existence does not extend, we think, beyond six or eight months.

It is the opinion of Dr. Bevan, that all the bees brought into existence at the queen's great laying in spring die before winter. But many never reach that period. Showers of rain, violent blasts of wind, sudden changes of atmosphere, destroy them in hundreds. In the clear, cold mornings and evenings of autumn, their eagerness for foraging entices them abroad early and late; when lighting on the ground, many are chilled and quickly perish. And should they escape the blighting atmosphere at the close of autumn, a bright sunshine in a winter day, when the ground perhaps is covered with snow, brings them abroad in multitudes, and the half of them never return.

The sole office of the male, or at least the primary one is to pair with the queen. He is father of the hive. Indolent and luxurious, he takes no part in the internal operations of the domicil, and never leaves it with a view of sharing in the labors of the field. When he does venture abroad it is only in the finest weather, and during the warmest part of the day. He is easily distinguished from the workers by his larger size, by his heavy motion in flight, and by his loud humming sound. His life is extremely short.

THE WORTH OF WOMAN.—By A. H. Everett.

FROM THE GERMAN OF SCHILLER.

Honored be woman! she beams on the sight,
Graceful and fair, like a being of light;
Scatters around her, wherever she strays,
Roses of bliss on our thorn-covered ways—
Roses of Paradise, sent from above,
To be gathered and twined in a garland of love.

Man on passion's stormy ocean
Tossed by surges mountain high,
Courts the hurricane commotions,
Spurns at reason's feeble cry.
Loud the tempest roars around him,
Louder still it roars within,
Flashing lights of Hope confound him,
Stuns him life's incessant din.

Woman invites him with bliss in her smile,
To cease from his toils and be happy awhile,
Whispering wooingly, "Come to my bower
Go not in search of the phantom of power!
Honor and wealth are illusory: come!
Happiness dwells in the temples of home."

Man with fury stern and savage,
Persecutes his brother man;
Reckless if he bless or ravage;
Action—action still his plan.
Now creating; now destroying;
Ceaseless wishes tear his breast,
Ever wishing;—ne'er enjoying;
Still to be—but never blest.

Woman, contented in silent repose,
Enjoys in its beauty life's flower as it blows,
And waters and tends it with innocent heart;
Far richer than man with his treasures of art,
And wiser by far in her circle confined
Than he with his science and flights of the mind.

Coldly to himself sufficing
Man disdains the gentler arts,
Knoweth not the bliss arising
From the interchange of hearts.
Slowly through his bosom stealing
Flows the genial current on,
Till by age's frost congealing
It is hardened into stone.

She, like the harp that instinctively sings,
As the night-breathing zephyr soft sighs o'er the strings,
Respond to each impulse with ready reply,
Whether sorrow or pleasure her sympathy try;
And tear-drops and smiles on her countenance play,
Like the sunshine and showers of a morning in May.

In the realms of man's dominion
Terror is the ruling word,
And the standard of opinion
Is the temper of the sword.
Strife exalts, and pity, blushing,
From the scene despairing flies,
Where to battle madly rushing
Brother upon brother dies.

Woman commands with a milder control,
She rules by enchantment the realm of the soul,
As she glances around in the light of her smile,
The roar of the passions is hushed for a while,
And discord, content from his fury to cease,
Reposes entranced on the pillow of peace.

BEAUTY AND THE WAVE.—By Mrs. C. B. Wilson.

Beauty sat tracing, with sportive fingers,
Names on the ocean sand one day;
Watching how long each wave would linger,
Ere it had washed the print away.

First Hope she sketched—the wave just kissed it,
Then sank to ocean's breast again,
As half regretful to have missed it,
And with the maid let hope remain.

Next Friendship's name, so fond, yet fleeting,
The maiden on the sand enshrined:
The wave flowed on—but soon retreating,
No trace of friendship left behind!

Love's then appeared—'twas deeply graven
On that frail page, by Beauty's hand;
The wave returned—ah! silly maiden,
Love's vows are ever writ on sand.

When one by one each name had perished,
Beauty grew wearied of her play; mn w
Finding that all most prized and cherished,
Some passing wave will sweep away!

ON THE EFFECTS OF ARTS, TRADES, AND PROFESSIONS, AS WELL AS HABITS OF LIVING, ON HEALTH AND LONGEVITY.

BY CHARLES A. LEE, M. D., NEW-YORK.

No. III.

In the farther prosecution of our task, it will facilitate our labors to treat of the different topics which naturally come under consideration, under certain general heads or classes; as it will be impossible to notice in detail the effects of each individual art, trade, or profession, on health and longevity. In forming such an arrangement, we shall follow with some modifications the plan laid down by Ramazzini, which is founded on the nature of the causes producing the diseases to which artisans are liable. And there is the less occasion to go into detail, as many of the arts which have attained a high importance in other countries, are pursued to a very limited extent in our own; and the manufacturing processes which are decidedly detrimental to health among us, are as yet comparatively few. These, as well as the minor trades, will fall under some of our general divisions.

The causes of disease among artisans may be arranged under three classes:—

I. The first class consists: 1. Of *confinement* and *insufficient ventilation*.—2. Of *undue exertion*.—3. Of *sedentary habits*.

II. The second class comprehends: 1. *Undue exertion of particular parts*, and *insufficient exercise of other parts*.—2. *Unnatural or constrained positions in different employments*.—3. *Temperature and moisture*.

III. The third class embraces those causes which consist, of material molecules, and which, coming directly or mediately in contact with the body, in the state either of vapor or of minute disintegration, penetrate the organs and disorder their functions. These are: 1. *Mineral molecules*.—2. *Vegetable molecules*.—3, *Animal molecules*.—4. *Mineral and vegetable molecules acting mechanically*.

Class First.—The deleterious influence of *confinement* and *insufficient ventilation* would seem so obvious, as scarcely to need remark; and yet there is no cause of disease so general, and so extensively overlooked and neglected as this. Our dwellings, school-rooms, theatres, and churches, assembly-rooms, laboratories, manufactories, hospitals—all testify to the truth of this remark; for nearly all are constructed without adequate provision for ventilation. Our architects seem to have studied anything but our health and comfort; as if convenience, and symmetry of proportion, and elegance of decoration, were only to be sought, and were incompatible with free ventilation. In manufactories, especially, do we find those employed suffering greatly from this cause. As the rooms are usually heated by air or steam conveyed in pipes, the air is not renewed with that rapidity which obtains in apartments furnished with open fireplaces; and the consequence is, that the inmates are constantly breathing large quantities of animal effluvia and carbonic acid gas, both of which are poisonous.

The importance of free ventilation will appear from the statement of a few simple facts.

The object of respiration is to bring the oxygen of the air in contact with the blood, by which the latter is deprived of its carbonic acid, and absorbs a new supply of oxygen. When the atmospheric air is taken into the lungs, it consists of about 79 per cent. of nitrogen, and 21 per cent. of oxygen, and nearly 1 per cent. of carbonic acid: when it is expelled, it is found to have lost about 9 per cent. of its oxygen, the place of which is supplied by an equal amount of carbonic acid. At the same time the blood has undergone an important change, from a dark purple hue, unfitted for the support of life, to a florid red color, carrying health and vigor to every fibre of the body.

It is not our purpose to inquire into the manner in which these changes are effected: it is sufficient for us that they are produced, and that they are absolutely essential to the existence of animal life.

As the rapidity with which the air is vitiated is not generally known or appreciated, the following calculations may not be unimportant: An individual breathes, on an average, from 14 to 20 times in a minute, and inhales from 15 to 40 cubic inches of air at each inspiration. According to Southwood Smith, it appears that in one minute an individual requires 616 cubic inches, or about 18 pints of air; and that during the same space, 24 cubic inches of oxygen have disappeared, and been replaced by a like amount of carbonic acid; so that in one hour each adult person vitiates the air by the subtraction of 1,440 cubic inches of oxygen. In one hour, the quantity of air inspired amounts to 2 hogsheads, 20 gallons, and 10 pints; in one day, to 57 hogsheads, 1 gallon, and 7 pints; and during the same period of time, 24 hogsheads of blood, or 1 hogshead each hour, and 144 ounces each minute, are sent to the lungs, to undergo the change already pointed out. Supposing 1 pint of air to be inhaled at each inspiration, which is very nearly the quantity, the amount decomposed is about one fourth, or a quarter of a pint; so that each individual actually vitiates or poisons one fourth of a pint of air every time he breathes. The rapidity with which this deteriorating process goes on is very clearly shown by placing a mouse under a large tight glass jar, full of air. In a few moments it becomes uneasy, pants for breath, and in a short time dies in convulsions.

There is another cause of deterioration of the air, not generally taken into account, which is of considerable importance. An adult gives off, by insensible perspiration, from 12 to 30 grains of vapor per minute; and it is ascertained that the air which has been sometime in contact with the skin, becomes chiefly carbonic acid gas. Tredgold states that it is desirable to change as much of the air of a room as the moisture given off would saturate in the same time. Accordingly, in a room at 60°, on the supposition, which is probably very nearly correct, that the moisture given off amounts to 18 grains, it will be necessary to change three cubic feet of air per minute for each individual in the room. If the temperature of the room be high, the exhalation of course will be in proportion.

Our rooms and public halls have also to be lighted at night; and here is another source of deterioration of the air. Each gas-burner is found to consume as much oxygen as 8 candles, and each candle renders about 300 cubic inches of air unfit for breathing every minute; so that 2 candles deteriorate the air as much as 1 individual. The total quantity of air, then, which will be vitiated by these causes, for each person, will be—

By respiration,	800	cubic	inches	per minute.
By exhalation,	5184	"	"	"
By lights,	432	"	"	"
Total,	6416	cubic inches, or nearly 4 cubic feet per minute.		

It is necessary, therefore, in order to preserve the purity of the air, that the above quantity should be changed every minute. For example: If a room contains 200 people, there should be 800 cubic feet of air changed every minute, or more than would fill a room 9 feet square and 9 feet high; 400 people will require 1,600 cubic feet of fresh air every minute. From the above estimates, any person may calculate the rapidity of deterioration in a close room of given dimensions, occupied by a given number of individuals.*

And now, what are the means of ventilation adopted in our private dwellings, and our public halls, schools, theatres, and churches? Can any one doubt that, for the most part, they are totally inadequate to a free and proper ventilation? Most of them have no provision, except the doors and windows, for the admission of pure air, and the escape of that which is impure; and the consequence is—headaches, dulness, vertigo, indigestion, debility, and a train of painful and disordered actions and sensations. We have long believed that the foundation of a large proportion of our chronic, and many of our acute diseases, is laid in the respiration of a vitiated and impure atmosphere; for as healthy blood is the ordained stimulus and pabulum of every organ and fibre in the animal system, and as there can be no healthy blood except from the contact of pure air, it necessarily follows that derangement of function and defect of nutrition must be the consequence of inhaling such an atmosphere.†

In no instance is the truth of this remark more strikingly displayed than in our schools and academies, especially boarding-schools. It would seem that our teachers believe in the total independence of the mind upon the body, and that their pupils are purely intellectual beings; and being thus spiritual, are not influenced by the organic and physical laws which control animal bodies. Whether this be the case or not, they certainly seem to act on such a belief; and we do not expect to witness any reform, until physiology becomes, as it long since should, a branch of general study, and considered absolutely indispensable to all who have anything to do with training the minds or bodies of the young. In our boarding-schools, not one girl in ten who has been an inmate for the space of twelve months, enjoys good health; and a still less proportion than this escape without a distortion of the spine. This has usually been attributed to want of exercise, and sitting upon stools without any support to the back; but we believe that breathing a vitiated atmosphere lays the foundation of the evil, by depriving the blood of its usual proportion of fibrine, thus rendering the muscles soft and flabby, and depriving them of their healthy contractility.

There is indeed no evil in our country which calls more loudly for reform than the custom of herding large numbers of children in a single room, for the ostensible purpose of education, without any proper provision for warming and ventilation. It will be seen from data already given, that in a room 16 by 24 feet, 35 children will render the air unfit for breathing in 45 minutes. If the room be 30 feet square and 9 feet high, and if there be 50 scholars, in 40 minutes all the air of such a room will have become contaminated, if fresh supplies be not provided, without taking into account the production of carbonic acid by exhalation from the surface. And yet, until within a short period, none of our country or city school-houses were furnished with ventilators, and the pupils were flogged for sleepiness and mental inactivity caused by the very air they were incessantly compelled to breathe.

Massachusetts has taken the lead in the reformation of this evil, as she has in almost every other of a public nature. In the Eliot school-house, North-Bennet street, Boston, for example, the rooms are heated by furnaces placed in the cellar, and the heated air constantly circulates through the rooms, and is carried off by six large ventilators. A writer in the Common School Journal states, that "so efficient is the circulation of the air, that at the opening of the new house, when 470 were assembled in one room to listen to an address from the mayor, though the room was thus crowded for more than two hours, yet no oppressive sensation was experienced; respiration was free and easy, and the pupils as lively and animated as in the open air. I believe the pupils seen in the new school-room would not be recognised as the same boys

* Tredgold gives the following rule for determining the area of tubes for ventilation: "Multiply the number of people the room is to contain by 4, and divide this product by 43 times the square root of the height of the tubes in feet, and the quotient is the area of the ventilator tube or tubes in feet."

By the height of the tubes is to be understood the height from the floor of the room to the place where the air escapes to the external atmosphere; and they must all be of the same height, when more than one. The spaces for admitting fresh air should be near to the floor, or in the floor of the room, and should be nearly of the same size as the ventilator tubes. Some think, however, that they should be at least double the size, in order to avoid the rapid influx of cold air. In a room ventilated in this manner, an open fire is inadmissible.—(*Tredgold on Warming and Ventilating Buildings*. p. 77.)

† It should be recollected that this, like most of the causes which destroy health, acts in a very slow and gradual manner. Changes, however, are at length produced, which become visible in the altered appearance of the individual; but the cause is too generally overlooked. Owing to the renovating power of the constitution, an occasional exposure to a heated and crowded room may be borne, perhaps, with impunity; whereas, the daily breathing of such an atmosphere, as in a school or manufactory, effects deep-seated and certain changes, which at no distant period will manifest themselves. It is in this way that the foundation of consumption (which carries off one sixth of our population) is laid, as well as that host of Protean nervous ailments with which our females are so generally afflicted.

who were cooped up in Baldwinplace vestry for six months, till their mental and moral depreciation had nearly destroyed their identity." Where anthracite coal can be obtained, school-houses should be warmed by furnaces placed in the cellar, or by Olmsted's stoves; or where there are several rooms, by hot water conveyed in pipes; and the ventilators in the lower rooms should be placed next to the ceiling overhead, and in the upper, a little way from the walls. We need not add that they should be sufficiently numerous to keep up a constant purity of the air; for if the supply of pure air be in the least degree below the supply of that which is foul, the health of the scholars must inevitably suffer in that proportion. The air for ventilation, however, should be taken from out of doors, and not from a cellar, although this answers well enough for warming. To show the influence of bad internal arrangements and bad locations for school-houses upon the health of the pupils, a physician of Massachusetts during the last year took measures to ascertain with exactness the relative amount of sickness suffered by the children in two annual schools. The schools were selected on account of their proximity, being but a short distance from each other: they consisted of very nearly the same number of children, belonging to families in the same condition of life, and no *general* physical causes were known to exist which should have distinguished them from each other in regard to the health of the pupils. But one house was dry and well ventilated; the other damp, and so situated as to render ventilation impracticable. In the former, during a period of 45 days, 5 scholars were absent, from sickness, to the amount in the whole of 20 days: in the latter, during the same time, and for the same cause, 19 children were absent, to an amount in the whole of 145 days, that is, almost four times the number of children, and more than seven times the amount of sickness, indicated a marked difference in their condition as to health.*

The public schools in this city also are very poorly ventilated; for, though the rooms are generally large, yet from the great number of scholars, often numbering 5 or 600, the air becomes excessively impure and oppressive. Whoever has been in the habit of entering these rooms at different periods of the day cannot but have noticed the great difference in the air, and even the altered appearance of the inmates. The sprightliness and activity of the morning have been succeeded by weariness, languor, and fatigue, long before the hour arrives for their liberation. The same tedious routine is pursued day after day; and the only wonder is that the result is not invariably bodily disease and mental imbecility.

We shall say nothing of subterranean apartments for religious meeting and Sabbath schools; nor of ball-rooms and theatres, with their scores of lamps and gas-burners: public attention has been too often directed to the evils connected with them to render any remarks from us necessary. As to our prisons and penitentiaries, as they are expressly designed for the punishment of culprits, it can hardly be expected that health or comfort should be consulted in their construction; accordingly, we find that they are made as air-tight as possible, in order, probably, to the more complete accomplishment of the objects for which they were designed!

Am. Rep. of Arts.

* Common School Journal.

THE FIRST SNOW-STORM.

As for the first wild flower,
In the early time of Spring,
As for the Summer shower,
When earth is languishing,
As for the rainbow's blending,
As for the day-star's glow,
I have watched for the descending
Of the Winter's virgin Snow!

It comes! on pinions aery,
The gentle flakes alight,
Like the torn plumes of a faery,
Or the fruit-tree blossoms white,
And the frozen ground receiveth
The tribute with a thrill;
And the muffled air, it cleaveth,
Is breathless, mute, and still.

Why watch I thus the falling
Of the first December snow?
Because its mystic calling
Is the voice of Long Ago!
Because it ever blendeth
With the memories of the boy,
Each flake, as it descendeth,
Enfolds a perished joy!

Oh, for those days when, rushing
Into the snowy air,
I felt the free, wild gushing
Of a spirit without care!
How through the drifts that whitened
Our window sills at home,
I dashed with heart unfrightened,
Like a dolphin through the foam!

And then the merry ringing
Of the sleigh-bells at the door,
And the winter evening, bringing
A thousand pleasures more!
And the dear friends who surrounded
My father's liberal hearth,
And the old songs that resounded,
And the hours of blameless mirth!

Alas, Snow of December!
These joys thou bringst to me,
But biddest me, too, remember
That they no more shall be!
That the freshness hath departed,
That the bloom for aye is gone,
That I am vacant-hearted,
In the bleak world alone!

ENVY is a cursed plant; some fibres of it are rooted in almost every man's nature, and it works in a sly, imperceptible manner; and that even in some persons who in the main are persons of wisdom and piety. Avoid it as a moral poison.

Paul preaching at Athens.

THE CARTOONS OF RAFFAELLE.

No. II.—PAUL PREACHING AT ATHENS.

One of the leading excellences of Raffaelle is the clear and perspicuous arrangement of his subject. Even Michael Angelo, notwithstanding his astonishing power in the invention of single groups, is comparably deficient in the conduct of a whole composition; and this remark will apply more or less to all the masters of the Roman school, if put in competition with Raffaelle. The Venetian painters, with the exception of Titian, sacrificed, without scruple, sentiment, propriety, and character, for the sake of dazzling the eye. We are enabled by this species of comparison to appreciate more fully the excellence of Raffaelle, whose compositions, although he never sacrifices, the higher to the more superficial qualities of art, present us with the richest and most picturesque combinations. A fine example of this excellence is furnished in the Cartoon of Paul preaching at Athens, engraved in the present number. This work, regarded merely as a composition of lines, and without adverting to the sentiment of it, is a finished example of laborious and beautiful arrangement; but when we consider it in reference to character, expression, and the manner in which the story is told, we are almost tempted to think that it holds the first place even among the productions of Raffaelle himself.

St. Paul, having been challenged by the philosophers of Athens to a public declaration of his doctrines in the Areopagus, has ascended the steps of a temple, where with uplifted hands he makes the solemn announcement: "Ye men of Athens! I have seen in your city an altar to the Unknown God, him declare I unto you!" His discourse involves in its general tenor all the leading points of the Christian dispensation—the immortality of the soul, the resurrection and redemption. The effect produced on his auditory is such as might be anticipated from the promulgation of a doctrine so new and so important. The persons who surround him are not to be considered a mere promiscuous assemblage of individuals. Among them, several figures may each be said to personify a class; and the different sects of Grecian philosophy may be easily distinguished. Here the Cynic, revolving deeply, and fabricating objections; there the Stoic, leaning on his staff, giving a steady but scornful attention, and fixed in obstinate incredulity; there the disciples of Plato, not conceding a full belief, but pleased at least with the beauty of the doctrine, and listening with gratified attention. Farther on is a promiscuous group of disputants, sophists, and free-thinkers, engaged in vehement discussion, but apparently more bent on exhibiting their own ingenuity than anxious to elicit truth or acknowledge conviction. At a considerable distance in the back-ground are seen two doctors of the Jewish law, who have listened to the discourse, rejected the mission, and turned their backs on the speaker and the place. On the first glance at the Cartoon the eye is arrested by the figure of St. Paul, which the painter has invested with every circumstance which can give it dignity and importance. We learn from the apostle himself that his exterior was

not imposing; but Raffaelle, knowing that painting can express its meaning only through the medium of form, has departed from the literal fact, and given him an appearance corresponding to the sacredness of his character. He stands in front, on an elevated site, and considerably apart from his audience. His action unites the almost incompatible qualities of sedateness and energy. It is simple and majestic, but kindled by divine enthusiasm; and we are at once impressed with the idea that he is pouring forth a torrent of eloquence overwhelming and irresistible. The immediate effect, as well as the eventual triumph of his doctrine, is intimated by the conversion of Damarias, and Dionysius the Areopagite, the foremost persons in the picture, who announce, with impassioned looks and gestures, their renunciation of idolatry, and acceptance of the Christian faith.

The buildings which occupy the back-ground (although betraying some inconsistencies in point of architectural style), are in themselves beautiful objects; but they are immediately connected with the subject, being the temples of the pagan deities, whose idolatrous worship the apostle is denouncing. These edifices may be considered also, together with the statues which surround them, to characterize the city of Athens, the mother of arts, and the seat of taste, wealth, and splendor. Throughout the works of Raffaelle, in the subordinate as well as the principal parts, we perceive the same penetrating intelligence; and these Cartoons especially, beyond any works of art extant, may be pronounced to be abstractions of pure intellect. We cannot forbear repeating a wish which we have already expressed, that when the new National Gallery is finished, these noble works may be removed to it; if it may be hoped that a taste for historic art will ever be created in this country, we can imagine nothing more likely to promote that object, than giving the public opportunity for the habitual contemplation of the Cartoons.

Penny Magazine.

AUTUMN.—By H. Greeley.

The melancholy days are come, the saddest of the year.—*Bryant.*

September! mellow, golden sunset of the year's departing glories! too soon are thy skies of gentle radiance obscured and thy breezes of delicious fragrance succeeded by the scowling clouds and fitful blasts of October—the evening twilight of the fading year! Nature has commenced in earnest to disrobe her of her glorious mantle of life and verdure—the leaves, which but yesterday were bright in all the variegated hues of beauty—and the brighter that their colors were but the pencillings of Death, arraying his victims in splendor for their sad, inevitable destiny—now withered, fallen, and lifeless, but cumber the walks they were wont to ornament and o'ershade, or impede the free flow of the rivulets that danced so late in joyousness and in melody beneath the screen of their umbrageous covering. The flowers which smiled so gayly from every bank and meadow, are gathered to the mighty receptacle of things that were—gone not, merely, but forgotten; and the lonely blossom which now chances to lift its shrinking head in some wind-sheltered valley, to meet the forbidden glances of the once genial planet, wakes emotions of pity rather than of gladness in the heart of the pensive wanderer.

Yet we are not of those who find sadness alike with sentiment—who can extract a sorrow as well as a moral from every change in Nature's aspect—who sees alike in the cradle, the altar, and the peering of the first silvery tokens of age from among the dark locks of manhood, but steps in the great journey to the tomb. No, our philosophy is of a less despondent, and yet, perchance, as deep a cast. In the great chain of being, we would look beyond the single link which is present to our senses, and see future springs still bursting in triumph the iron bands of winter, and coming forth in all the freshness and beauty of youth—new worlds and fairer assuming the stations of the stars which have been quenched in the darkness of Oblivion, and Life, awaking triumphant from the leaden slumber of Death. To the calm observer, therefore, we hold that there may be ample room for contemplation—none for despondency—in the change which has passed over Nature's ever-varying phenomena.

But autumn in the forest!—for it is there alone that Nature appears in her own majestic apparelling, undisguised and unshackled by the fantastic trickery of man. It is there that we have learned to love her in her moods of gentleness, and to feel in the deep communings of the spirit with her low, soft voices, that she hath lessons—ay, and pleasures—which the careless and the cold may never know. What a world of subtile and anon of mighty changes are comprised in the circle of a few brief weeks! At first the exuberent foliage of summer waxes fainter and less luxurious—the dark green of balmy June, is supplanted by a paler and a sicklier hue, from the simple exhaustion of the energy which called it into being. Anon the leaves assume a thousand fanciful colors, more brilliant and yet more varied than those of the dying dolphin, and the spectacle presented is more gorgeous and magnificent than the wildest dream of Eastern romance. But brief and uncertain is the duration of all earthly splendor. The biting frosts and chilling breezes of October soon wither indiscriminately the pale, the livid, the gaudy; and the spoils of a continent are trodden to the earth or scattered to the winds of heaven in promiscuous and undistinguished ruin.

And yet there is one scene connected with our forest reminiscences, which has come down through years unfaded from the tablets of memory, while many a fond and treasured recollection has crumbled beneath the iron hand of Time. It is that of deep, solemn rustle which accompanies the fall of the leaf in the far depths of Nature's else unbroken solitudes. When the first bitter frosts which mark the close of October are succeeded by the bright sunshine of a still yet bracing morning, it were a study for a poet to wander forth into the deep recesses of Nature's lonely

temples, and listen to the sound of the thousands on thousands of withered leaves returning to the earth from which they sprung, each of itself so noiselessly, yet together forming a subdued, unbroken harmony, which may well attune the mind to pensive, perchance to melancholy contemplation. No monitor can more clearly, perhaps none more forcibly, reiterate the great lesson of mortality—the impressive "Dust to dust."

And yet there is another feature of the mighty revolution of Nature—the change from a redundancy of apparelling to utter nakedness—which may not pass entirely unobserved. The disrobing of the great body of the forest, leaving but the skeleton of the goodly array which was so lately presented, brings prominently to view the unchanging evergreens with which it is more or less thickly studded. The tall pine bows deeper and sighs yet more audibly in echo to the moan of the passing breeze; the sturdy hemlock assumes a brighter green in the light of the ruddy sunset; and the dark fir waves fitfully to the howling blast which sweeps through its now unsheltered branches. The number of these unbending stoics of the forest seems to have increased almost infinitely, and the beholder is tempted to doubt that this can be the scene on which he so often gazed in the freshness and beauty of summer, when scarcely one of these sombre giants could be seen towering above the majestic sea of verdure with which they were encompassed.

Yet not all dark is the aspect of unsullied Nature, even at this gloomy crisis. The glad sun looks cheerly if not warmly down into many a sweet alcove that his midsummer rays could never penetrate, and the Spirit of Life still animates the most secluded recesses of her boundless domain, proclaiming that no spot illumined by the smile of Deity can be utterly lonely and desolate. Merry is the song of the ever-active squirrel, as he leaps from bough to bough of the leafless nut-tree in pursuit of its still-adhering fruit; and buoyant is the step of the hunter, as he glides stealthily over the leafy carpeting of the wilds, intent on deeds of death. The whirring sweep of the startled partridge bursts fitfully on the ear of the musing wanderer, and the shrill cry of the solitary jay breaks harshly across the great chain of Nature's hushed and solemn harmonies. Earth has still her thousand eloquent voices; but they speak only of the glories of the past; and it is by the eye of reason alone that we are enabled to look forward with fond anticipations to the resurrection of its splendors beneath the genial rays of another spring.

But away with these gloomy meditations! Is not the glow of the kindly fireside still brighter and more grateful than heretofore? Are not the evenings of autumn peculiarly the season of social and heartfelt enjoyment? Is it not the season of fraternal greetings?—of festal gatherings beneath the paternal roof—of glad reunions of kindred hearts long sundered by the adverse currents of fortune, and almost learned to look on friendship with the cold, misdoubting indifference of the callous world? A welcome, then, to the sober season of deep though quiet enjoyment—of noiseless yet unalloyed fruition. Pensively, not sadly, float we down the river of time through her brief domain, and look forward, with something of hope, but nought of impatience—to the return of brighter skies and a balmier and more exhilarating atmosphere.

IMPRISONMENT OF AUTHORS.

Imprisonment has not always disturbed the man of letters in the progress of his studies, but often unquestionably has greatly promoted them.

In prison, Boethius composed his work on the Consolations of Philosophy; and Grotius wrote his Commentary on Saint Matthew, with other works: the detail of his allotment of time to different studies, during the confinement, is very instructive.

Buchanan, in the dungeon of a monastery in Portugal, composed his excellent Paraphrases of the Psalms of David.

Cervantes composed the most agreeable book in the Spanish language during his captivity in Barbary.

Fleta, a well-known law production, was written by a person confined in the Fleet for debt: the name of the *place*, though not that of the *author*, has thus been preserved; and another work, "Fleta Minor, or the Laws of Art and Nature in knowing the Bodies of Metals, &c., by Sir John Pettus, 1683;" who gave it this title from the circumstance of his having translated it from the German during his confinement in this prison.

Louis the Twelfth, when Duke of Orleans, was long imprisoned in the Tower of Bourges, applying himself to his studies, which he had hitherto neglected: he became, in consequence, an enlightened monarch.

Margaret, queen of Henry the Fourth, king of France, confined in the Louvre, pursued very warmly the studies of elegant literature, and composed a very skilful apology for the irregularities of her conduct.

Charles the First, during his cruel confinement at Holmsby, wrote the Eidon Basilike, *The Royal Image*, addressed to his son; this work has, however, been attributed by his enemies to Dr. Gauden, who was incapable of writing the book, though not of disowning it.

Queen Elizabeth, while confined by her sister Mary, wrote several poems, which we do not find she ever could equal after her enlargement: and it is said Mary Queen of Scots, during her long imprisonment by Elizabeth, produced many pleasing poetic compositions.

Sir Walter Raleigh's unfinished History of the World, which leaves us to regret that later ages had not been celebrated by his sublime eloquence, was the fruits of eleven years imprisonment. It was written for the use of Prince Henry, as he and Dallington, who also wrote "Aphorisms" for the same prince, have told us; the prince looked over the manuscript. Of Raleigh it is observed, to employ the language of Hume, "They were struck with the extensive genius of the man,

who, being educated amid naval and military enterprises, had surpassed, in the pursuits of literature, even those of the most recluse and sedentary lives: and they admired his unbroken magnanimity, which at his age and under his circumstances, could engage him to undertake and execute so great a work as his History of the World." He was, however, assisted in this great work by the learning of several eminent persons; a circumstance which has not been noticed.

The plan of the *Henriade* was sketched, and the greater part composed, by Voltaire, during his imprisonment in the Bastile; and "the Pilgrim's Progress" of Bunyan was produced in a similar situation.

Howel, the author of "Familiar Letters," wrote the chief part of them, and almost all his other works, during his long confinement in the Fleet prison: he employed his fertile pen for subsistence, and in all his books we find much entertainment.

Lydiat, while confined in the King's Bench for debt, wrote his Annotations on the Parian Chronicle, which were first published by Prideaux. This was that learned scholar whom Johnson alludes to: an allusion not known to Boswell and others.

Freret, when imprisoned in the Bastile, was permitted only to have Bayle for his companion. His dictionary was always before him, and his principles were got by heart. To this circumstance we owe his works, animated by all the powers of skepticism.

Sir William Davenant finished his poem of Gondibert during his long confinement by the rebels in Carisbroke Castle.

De Foe, when imprisoned in Newgate for a political pamphlet, began his Review; a periodical paper, which was extended to nine thick volumes in quarto, and it has been supposed served as the model of the celebrated papers of Steele. There he also composed his Jure Divino.

Wicquefort's curious work on "Ambassadors" is dated from his prison, where he had been confined for state affairs. He softened the rigor of those heavy hours by several historical works.

One of the most interesting facts of this kind is the fate of an Italian scholar, of the name of Maggi. Early addicted to the study of the sciences, and particularly to the mathematics and military architecture, he defended Famagusta, besieged by the Turks, by inventing machines which destroyed their works. When that city was taken in 1571, they pillaged his library, and carried him away in chain. Now a slave, after his daily labors he amused a great part of his nights by literary compositions; *De Tintinnabulis*, on Bells, a treatise still read by the curious, was actually composed by him when a slave in Turkey, without any other resource than the erudition of his own memory, and the genius of which adversity could not deprive him.

Curiosities of Literature.

None are more inclined to become the enemies of vice, than those who have been its slaves, and are so happy as to have broken from their bondage.

THE LADIES' ANSWER TO THE BUNKER HILL APPEAL.—By Miss Lucy Hooper.

"The trumpet call
Of freedom hath gone forth."—*Whittier.*

We are coming, we are coming,
We have heard the thrilling call;
We are coming from the hill-side,
We are coming from the hall.
The city pours its thousands,
And the hamlet sends its pride,
As fought our patriot sires of old,
In battle side by side;
Again the call hath waked us,
As it waked our fathers then,
When the voice that thrilled the mountains,
Thrilled the valley and the glen.

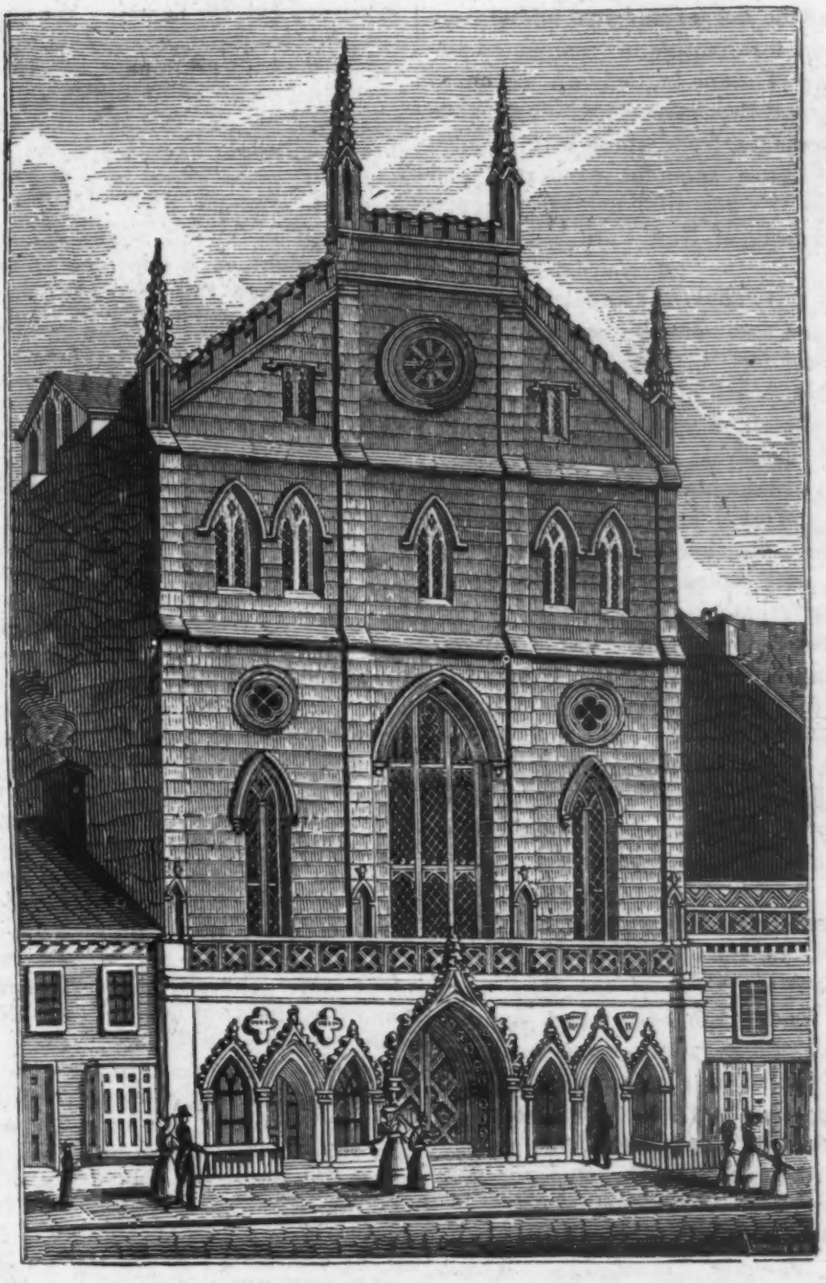
We are coming, we are coming,
The daughters of the brave,
The memory of the patriot dead
From cold neglect to save;
Holy and dear to all our hearts
Those hero sires of old,
Who left "the herd upon the lea,"
"The ploughshare in the mould:"
We are coming to the rescue,
We answer for the free;
The green graves of the slaughtered dead
A hallowed shrine must be.

We are coming, we are coming,
Again their deeds to tell,
Till the solid marble beareth
Their names where first they fell,
Joying to pour their heart's blood forth
On soil so rich and free,
And watering with that noble stream
The tree of Liberty.
Now from each household of our land
Beneath its ample shade,
We are coming, we are coming,
Be the thrilling answer made.

We are coming, we are coming,
To breathe its hallowed air:
We are coming, we are coming,
From homes beautiful and fair;
We are coming, we are coming—
High thoughts our bosoms fill,
One watchword wakens every heart
The name of Bunker Hill!
There Freedom's fire was lighted,
And its flames were broad and high,
Till a wakened and a rescued land
Sent up its battle-cry!

"Old Massachusetts," dost thou need
To gem thy "lordly crown,"
Aught richer than that battle-field
Which tells of thy renown?
Home of the pilgrim sires who crossed
The waste and trackless sea,
Was it not meet that on thy soil
The first brave strife should be?
Dear to thy children in thy home,
Dear to thine exiles far:
To Freedom's sons in every age
It shines a beacon-star.

We are coming, we are coming,
To raise an altar shrine,
Sacred to Freedom's honored name
On hallowed soil of thine.
We are coming, we are coming,
That thy martyrs brave and free,
In the record of the future,
Shall e'er be linked with thee,
That upon the glory never
One dimming shade may fall;
We are coming from the hill-side,
We are coming from the hall!



Masonic Hall, Broadway, New York.

MASONIC HALL, NEW YORK CITY.

The building known as Masonic Hall, in the city of New York, is situate on the east side of Broadway, between Duane and Pearl streets, and is one of the finest buildings of the kind in this country. The corner stone was laid on the twenty-fourth of June (St. John's day), 1826. The order of its architecture is Gothic, of the pointed arch style; and throughout the whole edifice, exterior and interior, it has the venerable aspect of buildings of this order, to be met with in nearly all the countries of Europe. It has a front of fifty feet on Broadway, and extends back one hundred and twenty feet.

The front of this edifice is granite, seventy feet in height from the street to the battlements in the centre. The pinnacles rise upward of ten feet above the roof. The doors and windows in front are said to be the first examples of the kind in the country. The grand entrance, which is arched, is fourteen feet in height, and twelve in width, next to the street; but the door, which recedes four feet (the thickness of the wall) is only six feet wide and not quite ten feet high. The crotchet arch of the centre door, ascends twenty-two feet in height, and is richly ornamented with raised work of cast iron, executed in New York. The centre window is twenty-two feet in height, and ten in width, finished with lead lights of a diamond form. The doors and windows on each side have corresponding columns, arches and ornaments, executed in cast

iron. There are four buttresses with niches and pedestals, two at the corner and two midway extending to the roof, terminating in ornamented pinnacles. A range of stone battlements surmount the flank walls; and the dormant windows have open-work battlements, from which may be seen the whole city like a splendid panorama, and surrounded with the beautiful natural scenery for which the vicinity of New York is so justly celebrated.

The basement story above the street is fourteen feet in height, and includes the great entrance hall, which is ten feet in width, and extends through the whole length of the building. This hall is highly ornamented with arches, pendants, open friths in the spandrels, and a beautiful frieze of raised Gothic ornaments. At the farther end of the hall is a staircase leading to the several apartments above. On each side of the hall is a range of rooms, with stores in front, and places in the rear for refreshments for visiters.

The second story is a grand Gothic saloon, ninety feet in length, forty-seven feet in breadth, and twenty-five feet high, and is one of the most magnificent halls in the Union. The floor is supported by elastic springs for dancing; the ceiling is divided into basket, or fan arches, with pendants of open-work; columns support the arches projecting from the walls, between which are the windows, with raised labels, enriched with crotchets, terminating with flowers at the points, and supported at the ends with carved corbels. The blank windows in the room are filled with mirrors, which render the hall, when lighted, very brilliant. A music-gallery extends across the lower end of the room, supported by a trussed girder, leaving the floor free of obstructions, for public assemblies. The front of the gallery is enriched with pierced Gothic tracery, and adds much to the beauty of the saloon.

The third story has four rooms, designed for the use of the Masonic Association. These rooms are decorated with clusters of columns, arches, and open panels, with beautiful draperies.

FARMERS' DEPARTMENT.

IMPROVED HUSBANDRY.

Hay, from England, Ireland, and France, is sold in Charleston, shipped into the interior of our state, and is very frequently sold at a price for which our farmers will hardly bring it to market! Surely there must be a profit derived from its supply, or it would not be brought to our ports. What a commentary on the condition of our agriculture! The obstinate adherence to old modes of practice keeps down knowledge, and retards useful and productive operations as innovations. We are called agriculturists—but do we deserve the name? We are *planters*, to be sure, for we put the seeds into the ground and expect them to germinate, but here we stop—we trust to the chance of our stock getting fat on grass, and to get through the winter on what shucks we might have, but we believe it would be ruinous to grow green crops for this express purpose. In summer, when grass is plenty, we eat lamb, and in the fall, before the stock begins to fall off, which it is expected to do, we eat mutton; but when the winter sets in, we look with anxiety to Kentucky or Tennessee to give us something to eat until next grass. Thus our domestic comforts are diminished; our stock dwindles away to skeletons, and we trust to chance that they may live through the wintry blasts in the open field! Now, how many of our farmers sow rye for their cattle and sheep? or how many make provision for them in winter? are there no grasses suited to our climate? are they of slower growth or more difficult of cultivation? are they with more difficulty converted into a state fitting them for preservation in a dry form? They flourish with a luxuriance far above the produce of higher climates, and are more easily cured than in more northern climes? Are lands exhausted by the cultivation of lucerne, or clover, or peas, or the different varieties of the root crops? The reverse is the fact—they are renovated by these very means—and is it not reasonable to supply our own wants, which we could do at a cheaper rate than by importing from other states. But the practice of other countries must be followed here, to enable us to do as they do; we must *cultivate* our lands—not *exhaust* them—we must adopt more generally the system of rotation and manuring, planting less and working more: our lands can be as well set to grass here as elsewhere, but the same care must be given to prepare them and render them fit for these crops. We sow grass-seed, and expect it to flourish of its own accord—hence the many failures which we witness—treat it as they do in other countries, and the same good result will follow. If we would give attention to putting our land in order for the cultivation of *grasses*, we should soon be satisfied of their value, and no longer consider them as *weeds;* the species called the crowfoot, in Columbia, has been known to yield six tuns per acre, the only preparation for planting being good manuring with early culture; the hay from crowfoot-grass is equal to any, and very little preparation is necessary. Lucerne grows here with great luxuriance, and herd-grass is well adapted to our climate; while the perennial rye-grass is to be found on all our low lands.

Carolina Planter.

PAINT YOUR TOOLS.

Every farmer should be provided with a small quantity of the coarser kind of paints—a few paint pots and brushes and paint oil. It is very easy to mix them, and by keeping his implements always in a good state of preservation. The expense would be trifling, and the trouble next to nothing; and besides, it is wisely ordained, that we can neither sow nor reap without trouble.

The greatest of all troubles must be that of having nothing to do. To have a place for every tool on the farm, and to keep them all painted and in good order, and when not used, protected from sun and air, ought to be an amusing as it is undoubtedly a binding obligation on every farmer.

FARMERS' CLUBS.

Almost every class of men are more accustomed to forming themselves into associations for their mutual improvement and advantage than farmers; and there is no reason why farmers should not avail themselves of the many advantages of associations as well as other classes. In some situations where the population is sparse, they may not enjoy good advantages for this purpose, but in most sections of the country, there is no great inconvenience on this account. Whenever business of importance calls, farmers readily assemble; and it is only necessary for them to form societies and learn the advantages resulting from them, in order to see that such societies are important, and their attendance on them a matter of interest.

If farmers would form associations in different towns, and in different sections of towns, when it is not convenient for all to meet at one point, supply themselves with papers and books and discuss the various modes of cultivation, the qualities of the different vegetable productions, the merits of different breeds of stock; the manner of rearing stock, and profits resulting from each kind, the various ways of producing, managing, and applying manures, the prices of stock, wool, fruit, and other kinds of produce in different sections of the country, and hundreds of other things connected with agriculture and its kindred branches, they would gain information of immense advantage; they would excel in their professions, and not only excel in their professions, but they would be more intelligent on every subject. They would improve their minds in literature, science, and the arts in general, and gain more influence, and hold a higher rank in society.

WINTER FOOD FOR COWS.

Mr. Charbert, the director of the veterinary school of Africa, had a number of cows which yielded twelve gallons of milk every day. In his publications on the subject, he observes that cows fed in the winter upon dry substances give less than those which are kept upon a green diet, and also that their milk loses its quality. He published the following recipe, by the use of which his cows afforded him an equal quantity and quality of milk during the winter as during the summer:—

"Take a bushel of potatoes, break them while raw, place them in a barrel standing up, putting in successively a layer of potatoes a layer of bran, and a small quantity of yest in the middle of the mass, which is to be left thus to ferment a whole week, and when the vinous taste has pervaded the whole mixture, it is then given to the cows, who eat it greedily."

PROTECTION OF SHEEP.

The point which my very few observations will embrace is the extraordinary increase in the growth and condition of sheep by being fed under cover, in an open yard, with a shed in it. This idea had no doubt occurred to many others beside myself, but I am not aware that any one has so fully examined into the effects attending that inquiry as I happened to do in the course of last winter and the winter before. Gentlemen, the principle is one that we have acknowledged in every practical way, by everything that eats, namely, that if it has plenty to eat, is warm and has nothing to do, it is very likely to increase. I certainly was not aware, until by repeated experiments I tested the truth of it, namely, that the same animals when placed in the shade and kept warm, not only increased more rapidly in their condition and weight than when out in the open air, but also that they consumed a much smaller quantity of food. This I have tested, both last year and this. I have not the papers by me to refer to, but, as far as my recollection goes, it is this, that the quantity of food consumed was less by at least one third, and that the increase of weight was fully one third, taking it in round numbers. British Farmer's Magazine.

SALT FOR ANIMALS.

The importance of furnishing salt to domestic animals, does not appear to be sufficiently understood. Though all are aware of the avidity with which animals eat it when given them; there are many who scarcely salt their animals through the season. Now it is evident that animals should have it at all times at their command. They will never eat more than is good for them, and it is essential to their health and comfort. The quantity allowed in Spain for 1,000 sheep is 26 quintals—probably twice the amount the same number usually get in this country; and this quantity is consumed by them in about five months, they getting little in the winter or while journeying to and from their mountain pastures. Lord Somerville allowed a tun of salt to a thousand sheep, and found they consumed the most in the spring and fall, and at these seasons it was probably most useful to them as a security against disease. Of its value for animals in a medical point of view, the following fact, stated by the celebrated Curwen, must be deemed decisive.

"Before I commenced giving my cattle salt, my farrier's bill averaged 58 pounds per annum (or more than two hundred and fifty dollars), and since I have used salt, I have never paid in any one year over five shillings."

Where cattle have access to sheds, troughs with a constant supply of salt in them should be kept for their use. Where they must be salted in the fields, troughs should be placed, and salt supplied frequently. There will in exposed troughs, always be more or less loss from rain, but that should not prevent a supply. It has been found an excellent practice where sheep alone come to the troughs, to put a little tar on the bottom and sprinkle the salt upon it. In this way a small portion of the tar is taken with the salt, and is not only found conducive to health, but, rubbed in this way over the nose, serves to prevent the attacks of the Estrus ovis or sheep-fly. Cultivator.

LITERARY NOTICES.

Georgia Illustrated. The first part of a very beautiful work, bearing this title, has just been published by Messrs. Richards, of Penfield, Georgia; and Gould, Newman, & Saxton, of New York city. It is designed to illustrate the natural scenery and public edifices of the state of Georgia—a state rich in picturesque and romantic views—by highly-finished steel engravings, accompanied by historical and topographical descriptions. The part before us, contains three splendid engravings; the State House, Rock Mountain, and Oglethorpe University. The sketches for the work are made by Mr. T. Addison Richards, a young and talented artist of Georgia. The literary department is edited by Mr. William C. Richards, and will doubtless possess great interest.

The work in its mechanical execution far surpasses anything of its kind hitherto attempted in this country, and rivals in beauty the imported works. That the engravings will be exquisitely finished, may be inferred from the fact that they are executed by Mr. Smillie. The letter-press is from stereotype plates cast from new and elegant type.

The price of this work is very low; 50 cents a number to subscribers. It deserves, and will, without doubt, receive a vast share of patronage. Georgians especially, will foster the enterprise. It is one of which they may well feel proud.

Pictorial Illustrations of the Bible. ROBERT SEARS, 122 Nassau St., New York. In our October number, we noticed this valuable work (then in press) in terms of high commendation; and we perceive the whole periodical press, wherever the book has found its way, to be equally pleased with it. Although it is but about six weeks since the first edition was published, yet now the publisher has not a single copy of that edition on his shelf. A second is just published, and we predict for it an equally rapid sale. The publisher is now preparing two more volumes, one of which will appear in April, and the other in October of the coming year. The engravings of the second volume are now in the hands of the artist, and embrace among others equally valuable, views of the sites of the seven ancient Christian churches of Asia.

The three volumes, when completed, will form a most valuable pictorial commentary on the Writings of Truth. The price of the work, beautifully bound and gilt, is only *two dollars* a volume.

Parry's Voyages. 2 vols. Harper & Brothers. These two volumes form Nos. cvii. & cviii. of the Family Library, and contain the whole of the narrative portion of the official report of Capt. W. E. Parry, made to the British board of Admirality, of his five voyages to the northern regions in search of a passage from the eastern to the western side of the American continent. This edition is very judiciously arranged, inasmuch as the mass of detail, incident to an official report, and void of general interest, is omitted, by which the work is rendered agreeable and instructive. The narrative is full of interest; for the scenes and adventures recorded by the navigator are in the highest degree novel and remarkable. These voyages, it is known, were undertaken at the expense of the British government, with the sole object in view of advancing the interests of commerce and general science, and it is indeed "profitable to know what perils were encountered, what courage, firmness, and ingenuity were displayed, what moral and physical influences were developed, and what triumphs of human skill were achieved" in this great undertaking.

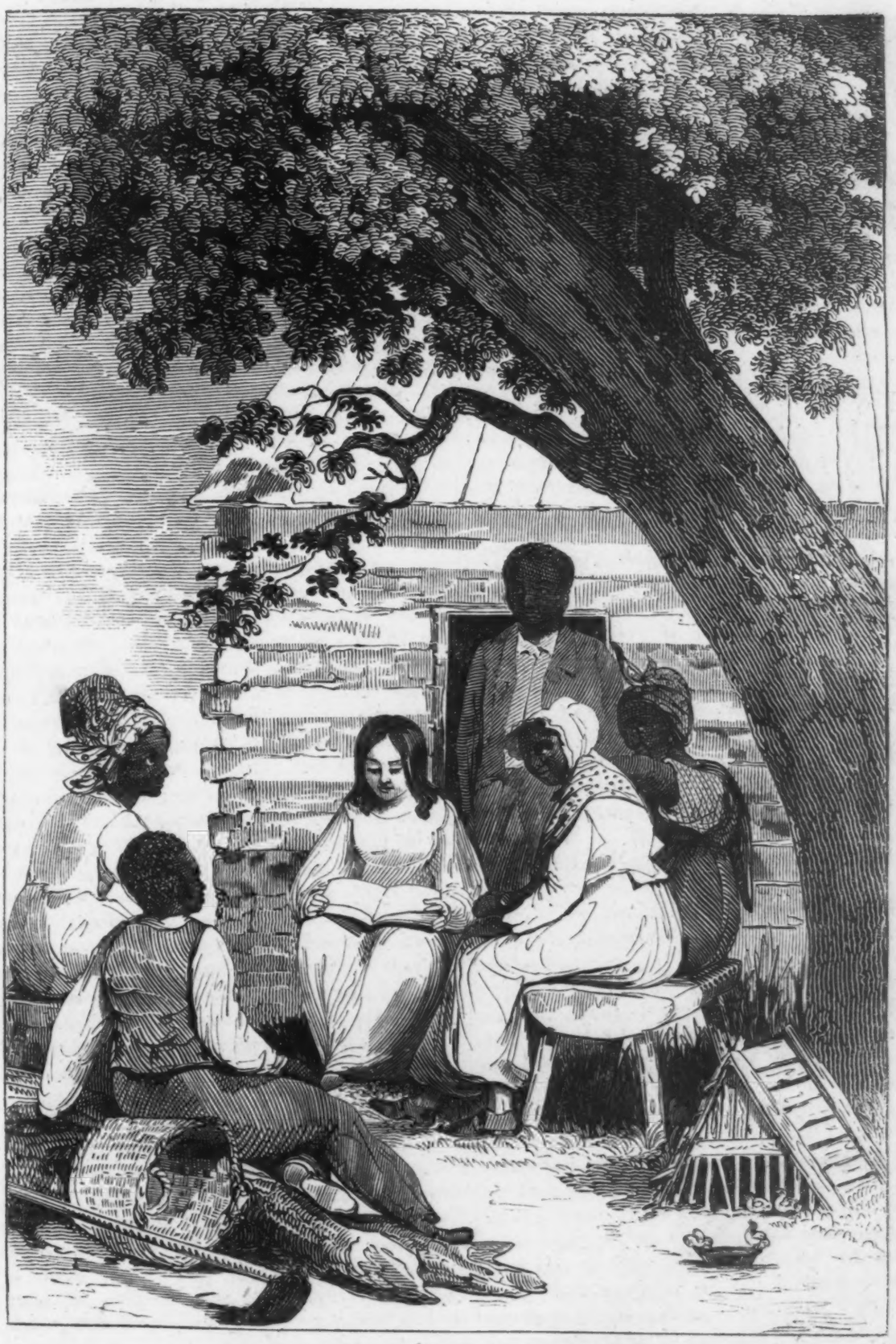
The Budget of the Bubble Family: By Lady Bulwer. 2 vols. Harper & Brothers. Here is a beautiful compound of pepper, ginger, allspice, and vinegar, with a sprinkling of honey and mustard, from the pen of the authoress of *Chevelly or the Man of Honor.* In that work, the amiable writer combed the hair of her husband with a three legged stool; in the book in question she fires promiscuously among the adherents, both male and female, of the political party to which he belongs; not forgetting to step aside occasionally to show up such men and women of easy virtue as the Rev. Dionysius Lardner, and Mrs. Heaviside. It is a lively, readable book, abounding with considerable wit, evincing talents of a high order, and speaks well of the *head* if not of the *heart* of the fair author. At home, where the characters who figure in the book under fictitious names are known, the work is doubtless popular among those who delight in satirical composition. Here it cannot be appreciated.

Harpers' School District Library. The third series of this valuable collection of books for the benefit of District Schools, is now published and for sale. This series contains several original works, prepared expressly for it by some of the best authors in our country, besides valuable compilations from the writings of eminent foreign authors. A cheaper and more valuable collection of books has never been published in this country. Professor Mason in the course of his oration before the American Institute, in October last, alluded to the superior advantages possessed by youth at the present day, for acquiring knowledge, and remarked, that "the District School Library now furnished by the Harpers for twenty dollars, is worth more for the education of a family, than all the books which could be found in some towns thirty years ago." This is a high but just commendation, and a parent cannot spend twenty dollars for a better purpose than procuring one of those libraries for his children.

For this sum he can procure fifty volumes of useful reading, handsomely bound, and put up in a case that can be hung up anywhere in his house. They embrace subjects of almost every kind, and if carefully studied by a family of children, will yield the father a thousandfold for his outlay.

The Ladies' Book for December, is received, filled as usual with the amusing and instructive. It is embellished with a touching Scotch scene, entitled "The Death of Luath," and a rich fashion plate, both admirably executed. L. A. Godey Philadelphia: Israel, Post 88 Bowery, New York.

Oration before the American Institute, by Professor Cyrus Mason. This oration, together with a list of the premiums awarded at the last fair of the American Institute, is neatly printed in pamphlet form. The oration is an able one and contains much useful matter for the consideration of Americans. We shall make some extracts from it in our next number, which relate to Agriculture and Popular Education.



READING THE BIBLE TO THE SLAVES.

THE NATIONAL QUESTION.

The great question, Shall the slaves in our country *increase* or *decrease*? which for a few years past has engrossed a large share of public attention, is gradually assuming a form from which the most beneficial results may be anticipated. At the first onset of the crusaders against this national evil, much alarm was given to the inhabitants of the slave states, by the startling and impracticable character of the proposition of those who were for the immediate emancipation of the slaves; and much indignant feeling and bitter heart-burning was engendered between the people of the North and South, by the harsh epithets applied to, and unjust denunciations made against, the slave-holders of the southern states. So bitter did this feeling become, that a man even *suspected* of being an "abolitionist," was in danger of the penalties of the Lynch code; and so suspicious did our southern brethren become of those, who, with the kindest intentions, endeavored to enlighten the understandings and improve the moral faculties of the slaves, that even these blessed privileges were curtailed, and the chain of bondage was drawn closer around its victim, by those who honestly felt that their social and political rights were invaded, and that self defence required such a course of policy. An excitement of fearful magnitude agitated the Union —the halls of our national legislature became the arena of a desperate struggle; and threats were made and fears entertained that the Union would be dissolved ere the discussion of this subject should cease. But now, though not a particle of the zeal of either party may be abated, the question can be discussed with more calmness—the "sober second thought of the people, which is seldom wrong and always efficient," is dispensing its salutary influence, and we do not doubt that the united energies of our whole people will, ere long, be brought to bear upon the subject of devising some method for removing the curse of slavery from our borders.

That slavery is an evil—"an evil morally, economically, physically, intellectually, socially, religiously, politically—evil in its inception, in its duration, and in its catastrophe—an unmixed evil without palliation or defence, save in necessity," no man that has the heart of a freeman, will deny, and we believe that such is the conviction of every slave-holder who thinks intelligently upon the subject. But the attendant evils of this system have been greatly magnified and exaggerated by those who have taken up arms against it. With more zeal than judgment—more enthusiasm than benevolence—they have held up the concomitants of slavery as worse, or no better, than slavery itself. They have ungenerously branded with the name of "robber, murderer, tyrant, despot, thief, and scoundrel," those who, by every apparent right, prove to them as such by the laws of their respective states, and the stronger ones of education and custom, practically upheld the system. They have represented the relation between master and slave as that of a cruel, hard-hearted tyrant, who eschews all attempts to improve the moral and intellectual condition of his slaves, and a benighted, bowed-down, half-starved and naked servant, upon whose path not a ray of intelligence beams, nor flowers of comfort blossom, and no hope beckons him onward. That such may be the case in some instances, there is no doubt, but that it is by any means universal, is far, very far from the fact. The united testimony of all residents in slave states attest the fact, that in most cases a strong feeling of attachment exists between master and slave, and that a scene similar to the one represented in our engraving, may be met with upon almost every plantation. Between the children of the master and his slaves, a feeling of real affection is entertained, and the tiny voice of childhood is frequently heard reading lessons of wisdom to a delighted group of sable listeners.

We would not be understood as offering an apology for slavery, by any means; but we would caution those who are battling against it, and who feel an equal solicitude for the preservation of the Union and human liberty, to beware how they plant their standard upon a false ground, or with quixotic zeal war against windmills as giants—against evils that do not exist.

Apposite to these few remarks, are the following opinions of C. M. Clay, of Kentucky, a son of Henry Clay, expressed in a pamphlet recently published, on the effects of free and slave labor. He refers in his remarks, to his own state, but they will apply equally well to any other state similarly situated:—

"That which distinguishes this age above all preceding time, is the invention of steam-power, and its application to machinery; since then, man has become god-like in his evidencing almost creative power. The world is teeming with improved machinery, the combined development of science and art. To us, it is all lost; we are, comparatively, living in centuries that are gone! we cannot make it, we cannot use it when made. Ohio is many years younger; possessed of fewer advantages than our state, the next census will give her, perhaps thirty members, while Kentucky will probably be struck down to twelve members of the national legislature. Cincinnati has manufactures to maintain her; last year she put up one thousand houses. Louisville, with superior natural advantages, as all the world knows, wrote "to rent" upon many of her houses already made. Ohio is a free, Kentucky a slave state. Upon the sand-hills of New-England,

where once grew junipers and black-jacks, are now villages, manufactories, meadows, wheat-fields, all the comforts, and many of the luxuries of life. In the south, where cotton and tobacco once rewarded the husbandmen can now be seen steril pine-groves, clay-banks and naked rocks; the crab-tree and mullen now struggle into life, where once luxuriantly grew the walnut and the vine. New-England is cultivated by whites—Virginia by blacks. The glory of the Old Dominion has departed, and New York has become the *Empire State.*

"Our autumn forests are illuminated with the campfires of the emigrant, as he leaves the home of his youth and the graves of his ancestors for ever, to seek in the far west a more congenial soil in the untamed wilderness. A single puny wagon, a thin-visaged wife, ragged children, his dogs and his gun, are his only household—these, these, are "*the rivals of slave labor.*" Tell me not of England, with a territory not much larger than Kentucky—a mere speck above wide ocean waves; there she stands, amid the wreck of centuries, the queen of the world, and the mistress of the seas; the palladium of liberty; the moral and intellectual light-house, upon which are fixed the eyes of ambition's storm-worn wanderers of every people, from the rising to the going down of the sun; the lawgiver of nations; the impersonation of civilization, and of the infinitude of the human mind. Were I not an American, would I were an Englishman! What, then, are the secret fountains of her glory, her liberty, and her machinery? The renown of her statesman and orators is only equalled by the genius, the taste, and the skill of her *mechanics* and *workmen.* She holds the accumulated population of centuries; we feed upon the virgin soil, yet old age, and the traces of dissolution are visibly traced upon the features of our youthful mother; while England, old England, wears her virgin bloom unimpaired, ever brightening into youth and loveliness by time itself! The comparison is painful; I pursue it no more! Every slave imported drives out a free and independent Kentuckian. On almost every farm, you will find many a house, as good as that in which the proprietor lives, untenanted, and falling to ruin and untimely decay. The day is come, or coming, when every white must work for the wages of the slave—his victuals and clothes—emigrate, or die! My sympathies are for the white man—bone of my bone, and flesh of my flesh—his industry, independence, and comfort, are the strength, the wealth, and the glory of the state.

"When Virginia was a colony of the British crown, she sternly remonstrated against the importation of slaves into her borders. In 1798, she passed a law, in force now in this state, forbidding the bringing in any slave from a foreign country who had been imported into the United States after the first of January, 1798. The constitution of the United States gives Congress the power to prohibit the importation of slaves into any of the states after the year 1808. In 1815, Kentucky passed a law similar to that of 1833. The thirteen original states were all slave states; the most of them have gradually thrown off the disease. There is nothing in Kentucky to make slavery eternal; nothing in the climate, nothing in the soil, nothing in the products, nothing in the circumstances, by which we are surrounded. I have not made up my mind that slavery shall exist here for ever; revolutions in it must and will come. Let us not be of those who having eyes, see not, and ears, hear not. God grant that we may avoid the dreadful alternative which some of the states seem to have made up their mind to, extermination—that will give to the whites or the blacks entire supremacy."

BUNKER HILL.—By John Neal.

No shout disturbed the night,
Before that fearful fight,
  There was no boasting high—
No marshalling of men,
Who ne'er might meet again.
  No cup was filled and quaffed to victory!
No plumes were there,
No banners fair,
  No trumpets breathed around—
  Nor the drum's startling sound
Broke on the midnight air.

There was no proud array!
No gorgeous show of military power,
  That lasteth for an hour,
And then hath passed away,
  On that eventful day,
No monarch gave the word,
  No hirelings obey,
No trumpet sound was heard—
  Nor the steed's startling neigh!
But commanders gathered there,
Stout of heart and strong of limb,
  Then heard the chaunted hymn,
And the lowly muttered prayer;
  And the foeman's sullen gun,
  As slowly he came on,
And the loud-pealed "hurrah!"

Then the strongest knee did fail,
And the ruddy cheeks grew pale;
And the balmy summer gale,
  A chill o'er many cast,
  Who had braved the winter's blast.
There was a distant roar,
  There was a nearer crash;
There was a shout along the shore,
  Along the hill a flash;
Then came the foeman's cry,
  And then the foeman's gun,
A single yell of agony—
  A groan—and all was done;
  A battle fought, a victory won.

ENGLISH MINES AND MINING.

NEWCASTLE-UPON-TYNE [Eng], *Aug.* 1840.

THAT man must be insane who should write a letter at Newcastle-upon-Tyne, about anything but *coal*. He has but one idea—coal! One thing fills his vision—coal! Coal is the standard of value, and coal-dust the circulating medium. The houses are built of coal. The streets are paved with coal! The inhabitants live on coal. The children look as if they were made of coal, and even the white clouds are as black as coal!

What a wonderful region is Durham and Northumberland shires! The whole country is undermined. Buildings are erected from seven to eight hundred feet below the surface of the earth, and streets and railways, running for miles in all directions, are daily traversed by thousands of human beings. Newcastle, with its population of sixty thousand, stands on the *crust* of a subterranean city. Some of the houses have sunk their foundations in consequence of the yielding of the ground beneath. The river Tyne, as large as the Thames at London, floats its commerce over these vast caverns; while at Sunderland, and other places on the coast, the ocean rolls its waves over the heads of the miners. The chief wealth of Durham and Northumberland lies hid in the bowels of the earth, where a very considerable portion of the inhabitants pass half their time. The coal-pits open their black mouths on every hill and in every valley. They may be distinguished far off by the towering enginery erected over them employed in raising the coal and water from the depths below, and by the piles of the former which lie around in hillocks waiting to be transported to market. The country is lined with railways—more abundant than hedge-rows—used in "carrying coals to Newcastle." At every half mile, you meet with the little villages of the pitmen (as the laborers are called). The snug brick cottages are arranged with regularity and taste—each having its *petit* grass-plat in front, usually decked with flowers, and its vegetable garden and fruit-trees in the rear. What a contrast between these smiling though humble abodes and the dismal caverns where the villagers spend nearly their whole conscious existence!

Great labor and expense attended the sinking of the shaft of a coal mine. The exact location of the strata must be ascertained by boring before the excavation commences. This determined, you know not what obstacles you may encounter from veins of rock or streams of water in your descent. And, then, the destruction of human life almost invariably incurred in these perilous enterprises! the gigantic nature of which may be inferred from the fact that the shafts are generally sunk to the depth of six or seven hundred feet, and sometimes to twelve hundred! Great rejoicings often take place in the neighborhood of a colliery when a new stratum of coal is opened ready for working. The following was the mode of celebrating the opening of the famous Gosforth colliery, in this vicinity, in 1839. It is copied from a publication put into my hands at Newcastle:—

"On the Saturday previous to the circumstance I am about to relate, the miners employed in sinking a pit at Gosforth reached the coal. Two years and a half had been spent in sinking this pit, the shaft of which was cut through one hundred and sixty fathoms of solid rock; and therefore the event was considered as one of great importance in the surrounding vicinity. Among other rejoicings which took place on this occasion, was a ball, which was held in the mine, at the depth of about eleven hundred feet below the surface! The ball-room is stated to have been in the form of an L; its width fifteen feet, base twenty-two feet, and perpendicular forty-eight feet. The company to the number of two hundred and thirty, of whom about one hundred were ladies (!) began to assemble at the mouth of the mine at half past nine o'clock, A. M., and continued, to descend the pit until one o'clock, P. M. Immediately on their arrival at the bottom of the pit, each individual proceeded to the face of the *drifts*, and hewed a piece of coal as a remembrance of this perilous expedition, and then returned to take part in the festivities of the ball-room. An excellent band, composed entirely of miners, was in attendance. As soon as a sufficient number of guests were assembled, dancing commenced, and was continued without intermission till about three o'clock, P. M., when they began to ascend the pit, which all of them accomplished in perfect safety, highly gratified with the subterranean amusements in which they had partaken. The colliery at which this novel entertainment took place is now one of the most extensive in Northumberland."

The great extent of the coal trade from this region may be imagined when it is known that Newcastle, which is wholly engaged in it, is the second port of the kingdom in the amount of its tunnage. The Tyne is covered with the colliers, wafting their cargoes to every part of the globe. As their sails blacken the river, one would think they were built in the eclipse, and rigged with darkness. Pluto's navy was not blacker.

PRAIRIE SKETCHES.—DOG-TOWNS.

ONE of the most striking peculiarities which rivet attention in the buffalo regions, is the number of what are called "dog-towns." These are spots of short white grass, growing exceedingly thick and fine, where the prairie-dogs gather, dig their holes, and live in communities. They burrow in the earth, throwing up little mounds, in the centre of which are the holes leading to the domicils below. It is said that these underground habitations are made to communicate below, and the dogs are continually burrowing, meeting each other in all directions. Snakes and owls are said to dwell with the dogs in their holes with the utmost harmony, but we had no opportunity of finding a proof of this, though the story is very generally believed. They feed upon the short, silken grass, where their dwellings are always located, and when their peculiar pasturage

is exhausted, they emigrate and form settlements elsewhere.

The dogs are about the size of full-grown rats, and they have a queer, shrill bark, which (if such a thing may be imagined) forms a sort of medium between the yelp of a cur and the squeal of a rat. They are generally white or gray, and we saw not one of a darker color. The towns sometimes spread over a distance of several hundred square yards in circumference, spangling the darker green of the prairie in a manner that would doubtless be exceedingly picturesque could it be viewed from a balloon. The little creatures are exceedingly difficult either to catch or kill, and it is very seldom that travellers attempt one or the other; for, upon the approach of intruders, those out on the grass instantly rush to their holes, and those under the ground pop out their heads to see what is the matter. If one is shot it tumbles back immediately into the hole, and there is no getting at it, but there is never any telling whether a shot takes effect or not, for whether shot or not the creatures disappear instantly. On one occasion, however, we hit a impudent little fellow which sat barking at us with its nose above the mound and broke its back. The poor dog was knocked out of its hole, and the disabled creature wriggled and struggled pitifully in the grass. This was the only opportunity we had to observe the little animal closely, for during our whole travel we were never at any time successful in a single shot, though we fired at the mounds repeatedly, both with pistols and rifles, as we rode along.

Those who have been compelled by necessity to eat the creature, say that the meat is extremely tough and unpalatable. Two men whom we met returning home disheartened, told us they were preserved from utter starvation by a lucky shot at a dog, which, with a little flour, was their only sustenance for nearly three days. When coming near a dog-town your ears are assailed with a vociferous barking from the whole community—which gradually ceases as you advance, until, as you pass over the spot, the little animals all disappear, and the singular sound is no more heard. Dozens of them will be sometimes peeping and barking above the mounds, and at the report of a rifle they are gone like magic into the earth, and scarcely a sign of them remains. You may poke the full length of a walking-stick into one of their holes and not find a bottom to the subterranean habitation. N. O. Pic·

AN ORIGINAL CHARACTER.

It is seldom that we step aside from the path of *utility* which we have marked out for our Magazine, to introduce the humorous or ludicrous, but here is a sketch, so graphic and true to life, that we believe our readers will thank us for giving them such a capital excuse for a hearty laugh. It is from the pen of the editor of the New York Sunday Mercury.

Whoever travels through any of the New England states, and twigs as he journeys the eccentricities of some of the NATIVES, cannot fail to be amused; and may derive many new ideas in respect to etymology and diversity of character.

Some years since an acquaintance of ours set out, on horseback, from the eastern part of Massachusetts for the Green mountains of Vermont. While travelling through the town of New Salem his road led into a piece of woods some five miles in length, and long before he got out of which he began to entertain doubts whether he should be blest with the sight of a human habitation; but as all things must have an end, so at last had the woods, and the nut-brown house of a farmer greeted his vision. Near the road was a tall, rawboned, overgrown, lantern-jawed boy, probably seventeen years of age, digging potatoes. He was a curious figure to behold. What was lacking in the length of his tow breeches was amply made up for behind; his suspenders appeared to be composed of birch bark, grape vine and sheepskin; and as for his hat which was of dingy white felt—poor thing! it had once evidently seen better days, but now, alas! it was only the shadow of its glory. Whether the tempests of time had beaten the top *in*, or the lad's expanding genius had burst it *out*, was difficult to tell; at any rate it was missing—and through the aperture red hairs in abundance stood six ways for Sunday. In short, he was one of the roughest specimens of domestic manufacture that ever mortal beheld. Our travelling friend, feeling an itching to scrape acquaintance with the crittur, drew up the reins of his horse and began:—

"Hallo, my good friend, can you inform me how far it is to the next house?"

Jonathan started up—leaned on his hoe-handle—rested one foot on the grambel of his sinister leg, and replied:—

"Hullo yourself! how'd dew? Wall I juss can. Taint near so fur as it used to be afor they cut the woods away—then 'twas generally reckoned four miles, but now the sun shrivels up the road and don't make more'n tew. The fust house you come to though, is a barn, and the next is a haystack; but old Hoshin's house is on bevant. You'll be sure to mest his gals long afore you get there; tarnil rompin' critters they plague our folk's more'n little. His sheep git in our paster every day and his gals in our orchard. Dad sets the dog arter the sheep and me arter the gals—and the way we makes the wool, and the petticoats fly, is a sin to snakes."

"I see you are inclined to be facetious, young man—pray tell me how it happens that one of your legs is shorter than the other?"

"I never 'lows any body to meddle with my grass tanglers, mistur; but seein' it is you I'll tell ye. I was born so at my tickler request, so that when I hold a plough, I can go with one foot in the furrer, and t'other on land, and not lop over; besides it is very convenient when I mow round a side hill."

"Very good indeed—how do your potatoes come on this year?"

"They don't come at all; I digs 'em out; and there's an everlastin' snarl of 'em in each hill."

"But they are small, I perceive."

"Yes, I know it—you see we planted some whoppin' blue noses over in that 'ere patch there, and they flourished so all firedly, that these 'ere stopt growin' just out of spite; 'cause they know'd they couldn't begin to keep up."

"You appear to be pretty smart, and I should think you could afford a better hat than the one you wear."

"The looks aint nothin'; its all in the behavior. This 'ere hat was my religous Sunday-go-to-meetin' hat, and its just as chock full of piety now as a dog is full of fleas. I've got a better one to hum, but I dont dig taters in it no how."

"You have been in these parts sometime I should guess?"

"I guess so tew. I was born'd and got my bro't'in up in that 'ere house; but my native place is down in Pordunk."

"Then you say that it is about three and a half miles to the next house?"

"Yes sir; 'twas a spell ago, and I don't believe it's grow'd much shorter since."

"Much obliged. Good by."

"Good by to ye—that's a darn slick hoss of yourn."

There reader—there is a Jonathan for you of the first water. You don't find his equal everywhere.

ADVANTAGES OF STUDYING THE NATURAL SCIENCES.

The study of the natural sciences is fast becoming a more and more favorite pursuit; every hour adds to the numbers of its votaries, and its warmest friends have at length every reason to be satisfied with the progress it is making, and to feel that before long it will keep pace with that of civilization and intelligence. Beyond this would be to expect impossibilities.

The friends of the natural sciences need ask for no stronger proof of the beneficial effects which follow the study of their favorite pursuits, than that offered by the simple fact of its onward progress, and the rapidly increasing favor it finds with the public. Did these not exist, in vain might Cuvier have labored; in vain would have been all the fascinating eloquence of his lectures; in vain the simplicity and clearness of his writings. He might, indeed for a time, have carried captive, by his powers of intellect, an imaginative people; but they would sooner or later have detected the imposture, had they been pursuing an ignis fatuus, or even a harmless but unprofitable shadow. An intelligent people may for a time be deceived and misled, but they are never long deliberately in error; and we may therefore appeal with confidence to the striking and conclusive facts that where there is most intelligence, there and there only, the natural sciences flourish best, and also that the more the attention of a people is called to the subject, the more and more popular do they become, and the greater and more universal the avidity with which their study is pursued. It is not only because they are a never-failing source of delightful occupation—it is not only because their study has been found by the experience of years to convey nothing at all at variance with morality or religion—but it is moreover because of the direct and positive benefit which they are found to create both in a religious and a moral point of view, that we find their study now encouraged and sanctioned by the enlightened and the unprejudiced public.

The study of nature is but the study of the works of the Almighty. We see in every portion, whether the animalcule, or the mastodon, the products of His all-directing hand. We trace in every atom that goes to make up the whole, the undeniable evidence of his inscrutable wisdom. No wonder, therefore, that all who ever opened the book of nature, with a proper spirit, never failed to turn from its contemplation with a more devout and reverential acknowledgement of their Author's infinite wisdom, goodness, and power. No wonder, therefore, that the naturalist is seldom or never other than most seriously impressed with religous and devotional feelings. It is no wonder, limited as are the number of those whose labors in the cause of natural history have rendered them conspicuous, so large a proportion should have been pre-eminent for their piety—that the Willoughboys and the Rays, the Linnæuses and the Cuviers, and a host of others, should have been as bright examples in the walks of private life, as they have since become celebrated for their writings. No wonder that we are constantly meeting in their productions, a pure spirit of religous belief breathing in all their writings, or bursts of lofty praise and enthusiastic admiration of nature's God, breaking forth and irradiating all they ever wrote. The cold and hypocritical materialism which marked a certain school of French naturalists in the days of their revolution, forms no real exception to this rule. Their land was at the time overflowing with atheism and infidelity. They bowed in weakness before the current of popular phrensy, and in insincere attempts to palliate their unbelief they impiously attempted to pervert the book of nature, and to make it support their absurdities. But this very effort was of itself the means of defeating the end they had in view, and the unwieldy bubble burst under the pressure of truth. The fabric of French infidelity tottered and fell under the efforts of the philosophers to sustain it, and through the very weight of that which they vainly supposed would give to it symetry and strength. Their wild conclusions disgusted by their absurdity all whom their impiety had failed to shock, and Christianity triumphed by means of the very blows that were designed for its destruction.

It is therefore impossible to come to any other conclusion than that the study of natural history must have a necessary and inevitable tendency to impress the mind with the truth of religion, and thereby to improve as well as regulate the moral feelings. The book of nature expounds the works of Omnipotence; and what grander, what more dignified, or what more enobling study can oc-

cupy the human mind? If, as has been well said by one of the best of English poets,

"The undevout astronomer is mad."

what are we to think of him who contemplates—not objects, all inquiry into whose nature is utterly futile—but, those whose properties he can distinguish, whose structure, he can examine, and whose economy he can explore, without feelings of awe and wonder at the power that contrived them. Silliman's Journal.

LITERARY STATISTICS.

In the library of Mr. Rogers, the poet, at his house in St. James place, London, is the original agreement between Milton, and his publisher, Samuel Symons, in 1666, for the copy of "Paradise Lost." It is written on one page of foolscap, signed by the contracting parties, and witnessed by John Fisher, and Benjamin Greene, servant to Mr. Milton. The autograph of the great poet, notwithstanding his blindness is remarkably regular and distinct. This interesting relic, we need hardly say, is carefully preserved by its distinguished owner. It is framed and glazed, and occupies a prominent place on the walls of the classical and hospitable mansion of the Poet of Memory. Mr. Rogers, we believe, gave seventy guineas for this relic! For the poem itself Milton received ten pounds, five being paid in advance and five at the end of two years, when thirteen hundred copies had been sold. For each edition not exceeding fifteen hundred copies, five pounds were to be paid; but in seven years the poet died, and the widow disposed of all her right, title, and interest, in the work for an additional sum of seven pounds. Thus the whole copyright of "Paradise Lost" brought to the author and his family seventeen pounds, and the bit of paper upon which the agreement was written was sold and eagerly purchased for seventy guineas.

Milton was more than fifty years of age, blind, infirm, and solitary, when he began the composition of his great epic. At a similar advanced period of life, Sir Walter Scott, struck with misfortune, entered into an engagement to liquidate, by his literary exertions, a debt of one hundred and twenty-eight thousand pound. Milton rested his long-cherished hopes of lasting fame upon the work thus late begun; Scott staked his character and reputation upon the fulfilment of his last engagement. Both entered with characteristic ardor upon their tasks, and, amid the pressure of increasing age and infirmity, never lost sight of their anticipated reward. In seven years, Milton completed his divine poem, and held in his hand the passport to immortality. In seven years Scott had paid all but one sixth of his enormous load of debt. The prize was within view, independence seemed almost in his grasp, but he had overtasked his strength, and disease, soon to be followed by death, came like an armed man, and closed the superhuman struggle. When will the annals of literature record again two such instances of heroic determination, under such adverse circumstances, united to the highest creative genius, and crowned with such marvellous results? Inverness Courier.

CONSUMPTION OF SMOKE

The fact that smoke, passing over a bright fire, is consumed, has long been known; but recently a patent has been taken out for effecting the passage in the following manner:—

The fire-place is divided lengthwise, by a thin wall of fire-bricks, so that there is, as it were, two fire-places under the boiler, each of which communicates with the main flue or chimney by a separate flue; therefore the two fire-places would have no connection, were it not that an aperture is left at the top of the partition wall, near the front of the fire-places, by which means the two fires can communicate with each other, so that were the flue at the end of one fire closed, and the other open, the only passage for the hot air and smoke of the fire, whose direct communication with the chimney is cut off, would be through the aperture at the top of the partition wall, and over the other fire whose direct communication with the chimney is still open. It will be seen that by means of this arrangement the principle is easily applied. The fire, whose direct communication with the chimney is closed, being charged with fresh fuel, its smoke, in its route to the chimney, must pass through the aperture of the partition and over the other fire, which, being bright, effectually consumes it. By the time the fire last charged has burnt bright, the other will require replenishing; its communication with the chimney is therefore closed and the other opened, the low fire is charged, its smoke passes over, and is consumed by the other bright fire. Thus by alternately charging one fire and then the other, all the smoke is consumed. The machinery for alternately closing the dampers is exceedingly simple. The smoke being all consumed, a saving of fuel is obtained.

TOMBS OF INDIAN KINGS.

In Lambysque, Peru, are to be seen the stupenduous graves of the Indian kings, who must have died in time of the Incas. These stupenduous mounds of earth are just upon the outside of the city, built of sundried brick, and are of gigantic dimensions. Some of them are said to be more than three thousand feet in circumference, and over one hundred and fifty in height, and must have required time and a deal of labor in their erection. One of them was opened in Truxillo, and silver and gold taken from it amounting to over two million dollars! A company of merchants have been organized, and they are about opening several others in search of more hidden treasures.

DRAWINGS FOR SCHOOLS, LYCEUMS, AND FAMILIES.

BY JOSIAH HOLBROOK.

EXPERIENCE and common sense unite their testimony in favor of drawing, as an early exercise for *every child*. For many reasons it ought to precede writing. The following are sufficient: It is easier, more simple, agreeable, elementary, natural, and practical; it is easier, because it is more simple; more agreeable, because it is more natural; and more practical, because it is more elementary; and, in connexion with geometry, it is either fundamental or nearly connected with every science and every art. It also speaks a universal language, which can be read and understood by every tongue and nation under heaven.

Experience has uniformly proved that children will learn drawing and writing, in connexion, sooner and better, than the latter can be learned separately. When written descriptions of objects are given in connexion with their drawings, as they always should be, they furnish highly valuable and interesting exercises in spelling, composition, and grammar, rather language; and lead children happily and successfully to observe and study the various objects which surround them. It aids every other study; retards none.

In Prussia and other parts of Germany, and in some sections of our own country, the drawing of geometrical figures, and of the common objects of nature and art, is an early and prominent exercise in all primary schools; as more finished pieces of perspective are in schools of a higher grade. Both in the younger and older schools, the drawing of maps, especially of the counties, towns, and neighborhoods where they are situated, furnishes a delightful and highly profitable exercise for their pupils.

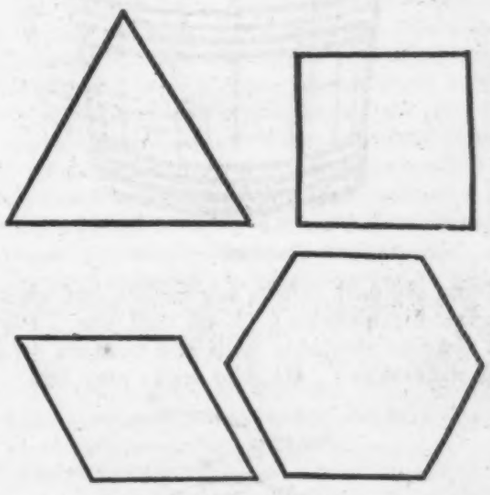
The pleasure and profit of drawing exercises are greatly increased when performed, as they frequently are, for sending from one school, state, or country, to another. By this means all nations can hold scientific, friendly, and even Christian intercourse, with each other, not only without expense or sacrifice, but with a high degree of profit and pleasure. Specimens, both of art and nature, have already been sent from this country to nearly every nation in the world. If the schools and lyceums in America should institute and sustain a general intercourse with the nations of Europe, Asia, Africa, and the Islands of the Sea, a knowledge of science and of the gospel might soon be diffused over our globe, the liabilities to contentions, wars, and bloodshed among nations greatly diminished, and the blessings of peace, intelligence, and religion greatly increased among all classes and sections of the human family.

For children to commence and rapidly advance in drawing, little more is necessary than *permission* from their parents and teachers. With slates and pencils in their hands, and a few simple figures before their eyes, all children, of their own accord, and with a high degree of pleasure, will commence their delineations, and frequently to the surprise no less than the pleasure of their friends. Descriptions of objects drawn commonly follow their natural delineations, which are also voluntary and highly satisfactory to these self-instructed pupils.

It is not of great importance what figures are first presented to children for their drawing exercises, except that they should be outlines, and of a simple character. A few of the most simple geometrical figures are commonly furnished for their first attempts, and these followed by the outlines of some implements or animals, familiar to the pupils; and the sooner they draw from the objects themselves, the better. The principal if not the only use of figures, or prints, to copy, is to give young pupils confidence in their own powers for farther efforts.

As a first effort for young pupils, parents and teachers may do well to encourage their children to draw the following figures, and others of a similar character, and to add the descriptions which accompany them, or others still shorter and more familiar, or more full, according to the age or the advancement of the child. In one instance, among thousands which might be mentioned, a little boy made his first attempt at the use of a pencil or pen by drawing a bird, and adding "birds fly in the air"—both of his own accord.

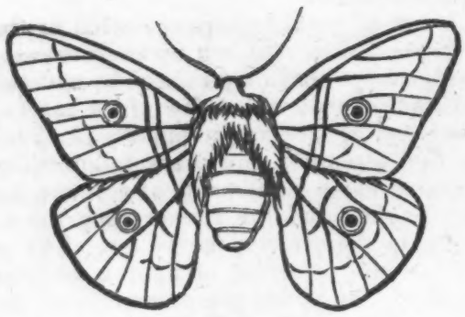
Equilateral Triangle. Square.



Rhombus. Hexagon.

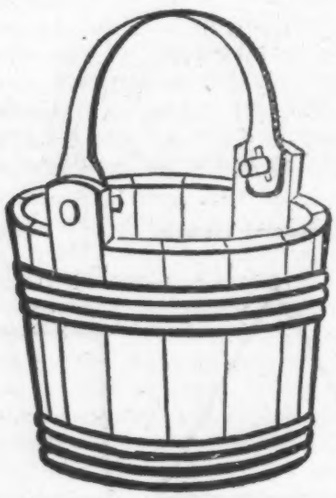
All three-sided figures are called triangles: when all the sides are equal, or of the same length, figures are called equilateral. A square has four sides, and four angles, all equal. A rhombus has all its sides, and its opposite angles, equal. A regular hexagon has six equal sides: when the sides are unequal, it is called irregular

Forty-four thousand different kinds of insects have already been discovered, and many are supposed to exist yet unknown. Butterflies are among the most beautiful of this part of creation. Most insects exist in three different forms, viz: the worm, chrysalis, and winged state. Some, like the silk-worm, are exceedingly useful; many are beautiful, and a few, like the wheat-fly and cut-worm, commit great ravages upon vegetation, and frequently blast the fairest hopes of farmers Ought not farmers, therefore, to learn their



Butterfly.

weakness, as they are so often compelled to do, their fearful power?



Pail.

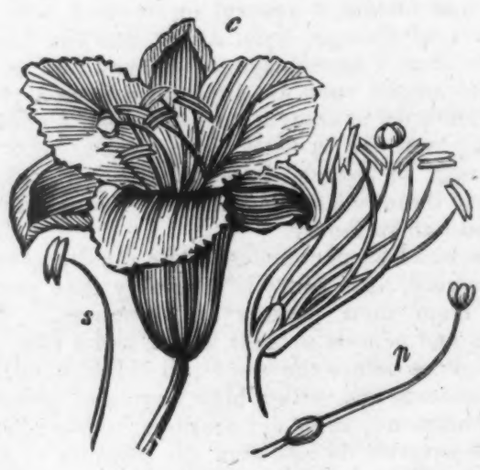
Some say pail, others say bucket, but what say English dictionaries? Look and see. Piggins and noggins resemble pails and buckets, what is their difference? He who seeks may find.

Leaves.

Leaves are the ornaments of plants. They are also their lungs, or breathing vessels. Among the seventy thousand different kinds of plants, no two have the same kind of leaf. Leaves differ in their size, shape, texture, thickness, surface, strength, and uses. The language to describe them is exact, beautiful, and highly delightful, as well as useful to all young persons. If seen and drawn at the same time, leaves, with the terms and language which describe them, are learned with little time and much pleasure. The terms acuminate, emarginate, obtuse, and cupidate, which relate to the ends or terminations of leaves, are shown by the letters *a*, *e* *o*, and *c*.

Oak.

Forty-four different kinds of oak are found in American forests. The most important of the whole is the white oak, the leaf of which is here represented. It is called the king of the forests. It is a majestic tree, and useful for houses, ships, ploughs, and numerous other implements. As



Flowers.

fuel, it has, for many ages, diffused much warmth and comfort to thousands and millions of happy family circles.

Corolla, stamens, and pistils, compose principally or entirely the flowers of plants. The stamens and pistils are the organs which produce fruits and perpetuate species. They are also the principal ground of the Linnæan classes and orders of plants. In this cut the corolla, stamens, and pistil, are designated by the letters *c*, *s*, and *p*, by which it may be seen that the plant shown belongs to the sixth class and first order, and is a species of lily.

SOCIAL IMPROVEMENTS.

EXTRACT from an oration on the thirteenth anniversary of the American Institute, delivered by Cyrus Mason Esq., October 15, 1840.

AGRICULTURE.

De Tocqueville has said, that "Agriculture is, perhaps, of all the useful arts, that which improves most slowly among democratic nations. Frequently, indeed, it would seem stationary, because other arts are making rapid strides toward perfection. On the other hand, almost all the tastes and habits which the equality of conditions engenders, naturally lead men to commercial and industrial occupations."

Now there is some truth in this remark, as there is in many of this author's views, which a theory has led him to state too strongly. But suppose it to be true; yet, I think it can be shown, that the improvements of which we are discoursing have a powerful tendency to elevate the intellectual and social character of the agricultural class of society in our country. And if it is true of this class, it must be true of all the others.

Increased facilities for commerce or manufactures turn indirectly to the advantage of the farmer and his family. But improvements in husbandry and domestic operations go directly to favor the better education of the farmers' sons and daughters. Every step gained in this direction draws out more candidates for the academy, and rears the men who become distinguished in political, commercial, and mechanical pursuits. The great men of our country come up habitually from the farming class. And the intellectual elevation of the youth of this class depends on the measure of time they can give to reading and study, and the access they have to books, maps, and scientific instruments.

On a farm of one or two hundred acres, a certain amount of labor must be done by the owner and his family, or they cannot meet the necessary expenses of a comfortable maintenance. The main chance must be minded by themselves. At certain periods of the year every boy that can spread hay, or carry a sheaf, or rake after a cart, must work. All the boys, who can hoe half a row, must work most of the summer. The work must be all done; and then the boys may go to school.

Whoever was a farmer's boy thirty years ago, sees now a vast change in favor of leisure for education, and the facilities for gaining knowledge. At that time, the hard, delving toil on the farm seemed to have no end. If there came a rainy day, there was no rest from toil; the clumsy tools of husbandry were to be mended or ground; the threshing flail, and hand-fan were to be swung, till our eyes were filled with dust, and our hands ready to drop; the younger boys were shelling corn on the frying-pan; and the youngest of all was turning the quill-wheel, or picking wool, or tugging at the churn-handle. At the approach of winter we hoped to get to school; but the hope was long deferred. The fair days were required to cut and bring home vast quantities of fuel; and a boy could drive the team. And when this was done, then came the horrid work of dressing flax. Many boys have a dreary remembrance of that vile employment; and would have kissed the hand of the man who would have ground up the last flaxseed on the earth.

But now, every one of these labors has been turned over to machines, which have reduced the work of months to a few days. Flax is scarcely cultivated. A few cords of wood supply the farm-house. The tools of husbandry have been perfected. Half the labor of the farm is superseded; and three fourths of that which used to be laid on the boys, is no longer required. Horticulture has found favor with the farmer. Fruit-trees and flowers surround almost every rural dwelling. The rearing of fine domestic animals, occupies general attention. The intellectual part of agriculture has increased, just in proportion as toil has been diminished. The farmer is becoming a botanist, a geologist, a chymist. He reads; he corresponds with ingenious men; he communicates his experience through the public journal; he finds time for occasional journeys; his manners are improved; his taste is refined; his intellect is elevated; and his social character is improved.

But there has been a still greater improvment in the facilities for the attainment of knowledge among the children and youth of rural districts in our country.

The district school library, now furnished by the Harpers for $20, is worth more for the education of a family, than all the books which could be found in some towns of this state thirty years ago.

We then lacked the necessary means for forming a taste for intellectual improvement. The boy who learned Pike's Arithmetic was a distinguished boy; and Flint's Surveying, made him a sure candidate for greatness. Our diversions were gross, expensive, and dangerous; and youthful indiscretion frequently brought whole families to open shame. But the social state has been improved almost as much as the physical condition of the people; and this happy change is the result of labor-saving machines.

But this topic is not half exhausted; for if the change wrought in favor of the education of boys

nas been great, the change in favor of female education and refinement has been greater. The drudgery of the farmer's wife and daughters, has been almost annihilated by the cotton and woollen factories, and the improved instruments of household labor. There has been some alarm among men on this subject; but there is nothing to fear. The thrifty farmer can well afford the luxury of seeing his wife and daughters in their improved condition. Even if he labors an extra hour for their sake, he will be all the happier for the sacrifice.

If his household affairs are prudently managed, the products of his farm will not be half consumed in providing for the bare necessities of his family. When these are secured, all the best ends of human life will be favored, by meliorating the condition, promoting the intellectual culture, and refining the manners and tastes of his wife and daughters. No other expenditure is so sure to bring home a large return of virtue, dignity, and fair renown. For woman is the guardian angel of the social state; the presiding goddess of domestic happiness. She must be refined, or man cannot be civilized; to facilitate her refinement, is not to make her vain or indolent. Emancipated from her low drudgery, she turns her hand to more delicate, but not less useful employments; such employments are multiplying in number and value with every day's improvements. Articles of daily consumption and vast amount, now procured from Europe, are beginning to be manufactured by the women and children of our country. Our straw goods are taking the place of the English and Italian. And, passing over other objects, we may hereafter except an extensive application of female industry to the culture of silk.

When the fever of speculation has gone by, and the laughers at speculation have had their turn, the mulberry-trees will be found growing in vast numbers all over the face of the country. And when there has been time to mature their growth, the business will be found attractive and profitable. The end of this speculation will resemble that of the speculation in merino sheep. The fever had its course, and the laughers their fun; but the improved breed of sheep remains, the public revenue from imported fine wool and cloth has been reduced, and a rich blessing to our country has been the result.

POPULAR EDUCATION.

To a large and still growing extent, the instruction of children is now committed to the gentler sex. And they are doing the work with commendable zeal and success.

And even those young women, who used to go out as spinsters, are now able to provide for themselves in a better way by working in the factories. I am well informed of the state and results of this sort of employment in New England; and have no doubt, that the results are friendly to the cause of intelligence and good manners.

It is a known fact, that within thirty years, the measure of time appropriated to the education of children, in the same district has been more than doubled. The advantages arising from better books, maps, globes, and other apparatus, have been augmented in an equal degree. And, while the whole community is better housed, fed, and clothed, than before, can it be questioned, that the intellectual and social character of the people has been elevated?

Turn your thoughts to the true history of this matter. The mind is cultivated by its knowledge of the qualities of things, and of the relations which subsist between those things. To trace things back to their elements, to observe their combinations, mark their changes through which they pass, and discover their laws to which they conform—this is the very work of philosophy, the daily business of pure science, as a method of discovery. To apply these results of observation and discovery to the uses of mankind, in all the ways by which labor can be saved and enjoyment increased—this is the business of practical science; and the results so applied are but other names for all the useful arts of life. Thus you see, how closely the inventor in arts is allied to the discoverer in pure science. And can you suppose, that the mass of the people can be daily employed in the use of these inventions, without themselves seeking to investigate the causes or laws from which they spring? Is there not in common minds a natural proneness to such inquiries, whenever the door to them is opened? Is there not an intellectual pleasure in such inquiries, which both animates and rewards the search? Yes, and the leisure, which prosperity brings in its train is improved by great numbers of our youth, who love science for her own intrinsic beauty, and forego many gratifications, that they may learn and reveal yet more the secrets of nature. In their intercourse with society they diffuse the same spirit; they impart an intellectual tone and taste to the rising generation; and they enlighten the ingenuity of those, who give themselves to the more strictly practical pursuits of invention.

I grant, that pure science and good letters are cultivated by the favored few, in foreign universities and under royal patronage, beyond what is done in our new and republican country. But is it not a higher glory to have raised the great mass of the people to a degree of intelligence, which softens their manners, cheers their social life, and unfits them for being the mere tools of tyrants and food for cannon?

The course of discovery and invention in physical science has astonished the civilized world during the last forty years. Triumphs already gained give intimation of still greater to be expected. And I live in no fear that civilized man will ever recede from the ground he has already gained. Science is no longer shut up in cloisters of the few. Philosophers no longer, like Archimedes, despise the applications of science to practical purposes. The art of printing has rendered the best books on all subjects of learning the most common books. The learning of the world is spread over the world. The causes, which once overwhelmed the science of civilized man, cannot operate again in any free country; and the growth of civil liberty is as cer-

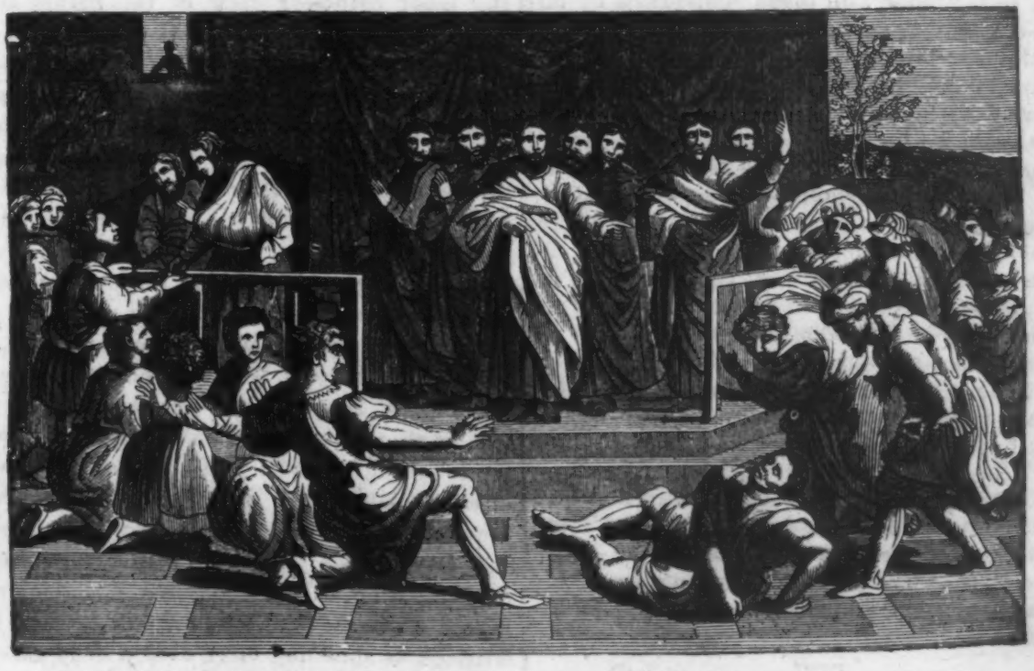
tain as the course of time. The wars which have desolated the earth are not again to rage with the same ease and for the same causes. The melioration of the physical condition of the people must ever render it more costly and more difficult to raise and support great armies. The temperance reform in Ireland has already emptied the criminal courts, and jails, and gin-shops, the three best places for the enlistment of soldiers. And if Ireland be true to herself in the course she has commenced for the education of the common people, her redemption is sure.

THE CARTOONS OF RAFFAELLE.

No. III.—THE DEATH OF ANANIAS.

The judgment of Raffaelle is evinced as much in the choice of his subjects as in his manner of treating them. He seizes invariably on the leading points both of the general and the particular narrative, and the cartoons may be said to furnish a compendium of the early history of the promulgation of the Christian faith. In the cartoon of "Peter receiving the Keys," Christ delivers his last charge to his disciples; in that of "Paul preaching," we see that the divine mission is carried into effect. St. Paul, however, appears at Athens only as the inspired preacher; but the superhuman attributes with which the disciples were invested after the death of Christ, are more strikingly exhibited in the cartoons of "the Healing the Cripple," "Elymas the Sorcerer," and "the Death of Ananias." Here the apostles act more obviously with the authority of divine power; and the miracles which they perform illustrate the tenets and attest the truth of their doctrine. The consolation and relief announced to the poor and the afflicted are given to the cripple who is healed at the gate of the temple; while the penalties denounced on sin are exemplified in the punishments inflicted on Elymas and on Ananias.

After the miraculous preaching on the day of Pentecost, and the astounding cure of the cripple by St. Peter, proselytism increased rapidly, and converts came over in multitudes. These primitive Christians embraced in the largest and most literal sense the benevolent and self-denying principles of the new creed; laying their goods at the feet of the apostles, "they were of one heart and of one soul, and had all things in common." These events form the groundwork of the cartoon of the Death of Ananias. The apostles are collected beneath a spacious but humble roof, suited to the humility of their temporal pretensions; as preachers and instructers they stand on an elevated platform, which gives them their due place and importance in the composition; but to obviate the appearance of mere homeliness and meanness, this enclosure is hung with a slight drapery, and enclosed by a railing. On the right, groups of converts are entering, bearing offerings of various descriptions, which the apostles are distributing on the opposite side to various applicants. Among the proselytes came Ananias, a calculating and sordid spirit, who was willing to purchase the advantages of the new communion, but unable to resist the instigations of habitual avarice. He had sold a piece of land, the value of which he professes to offer to the apostles; but while pretending to give the whole in the spirit of sincere and voluntary devotion, he cunningly secretes a part. The doom which awaits him, however, is not inflicted merely as the punishment of his avarice, nor even of the simple falsehood, but for the gratuitous hypocrisy and sanctimonious pretension which Christ him-



The Death of Ananias.

self had so earnestly and repeatedly denounced, and which, in this instance, was attempting to make its way over the threshold of his infant church. By the immediate inspiration of God, the apostle detects the guilt of Ananias, and pronounces his doom. "Was not the land thine own," said St. Peter to him, "and after it was sold, was it not in thine own power? Thou hast lied, not unto men, but unto God! And Ananias, hearing these words, fell down, and gave up the ghost." There is not in the whole round of Raffaelle's works anything more strikingly just, appropriate, and energetic, whether in relation to action, character, or expression, than his representation of this event. Were we unacquainted with the subject, it would be impossible to mistake its general meaning. The authoritative attitude of St. Peter, his stern expression, the extended arm and uplifted finger, convey at once the impression that he is giving utterance to some terrible denunciation; while the apostles behind, with hands folded, or pointed toward heaven, acknowledge, with devout astonishment, the manifest interposition of divine justice. The position of Ananias is a wonderful example of Raffaelle's intuitive perception, or of his acute observation of actual fact, or more probably, perhaps, of both. It is evident that the figure has been struck with sudden death; the head has fallen on the shoulders, the eyes have lost their volition, the convulsions which contract the limbs are the spasms of mortal agony; but the fulness and roundness of the muscles show that the blow has fallen on the delinquent while in the full possession of health and vigor. The whole action is consecutive; he has been kneeling at the steps, has fallen backward, and we perceive, notwithstanding his feeble and unconscious effort to sustain himself on his wrist, that in another moment he will be extended on the floor. So sudden has been the shock, that it has not been perceived except by the persons immediately adjacent to the spot. In these individuals of different sex and ages, the fear and astonishment, naturally excited by such an event, are finely portrayed; the young man on the left, recoiling in dismay, affords an effective contrast in the fine extension of his limbs to the foreshortened figure of Ananias. The two men on the right, in the midst of their amazement, appear to admit, by their gestures and expression, the justice of the infliction. It has been questioned whether the woman who is advancing from behind was meant for Sapphira, as it is stated in the sacred record that three hours had elapsed after the death of Ananias before she entered the place. Notwithstanding this objection, it is most probable that Raffaelle intended this figure for the wife of Ananias; and the slight inaccuracy is more than atoned for by the sublime moral, which shows the woman approaching the spot where her husband had met his doom, and where her own death awaits her, but wholly unconscious of those judgments, and absorbed in counting that gold by which both she and her partner had been betrayed to their fate.

A true friend eases many troubles.

MORAL AND PHYSICAL EDUCATION.

Review of a Lecture on Moral and Physical Education, delivered before the Mechanics' Institute, in the City of New York, by John B. Scoles, Esq.; November 23, 1840.

In this lecture, Mr. Scoles enters into an analysis of the intellectual, moral, and physical constitution of man, and the education particularly adapted to each element of that constitution, so as to produce the desired result of enlightened and virtuous character. He combats the popular errors upon the subject of education, particularly the substitution of a cultivation of the intellect merely, for a proper discipline of the moral powers; and the neglect of the physical faculties—the healthy condition and regular exercise of which are essential to any sound, vigorous, and sustained efforts of mind. He insists that a proper education is one that includes the whole man; and regards him as an intellectual, moral, and physical being—all his faculties being to a certain degree dependant upon each other, and each requiring a cultivation and discipline peculiar to itself, and in harmony with its own functions. The lecturer says:—

"Without entering into any physiological or metaphysical discussion, one truth is so obvious that I presume it will be denied by no one. Man possesses intellectual powers, moral powers, and physical powers. The cultivation of the one, by no means necessarily implies the cultivation of the other. An individual may be a highly intellectual man, and yet morally deficient. He may understand well the nature of benevolence, and discourse most eloquently upon it, and yet he may not be a benevolent man. He may entertain the most orthodox view of the nature of conscience, and defend and illustrate his opinions with uncommon zeal, ability, and acuteness of argument, and still be a most corrupt and unprincipled man. He may pour out his sentiments in strains of fervid poetry or eloquence, and the theme may be devotion—and yet no real spirit of devotion may animate his breast. His intellect has been cultivated, but his moral feelings have been neglected. This is the reason why the conversation and the writings of a man are sometimes so strangely at variance with his life. He talks of virtue, and lives a profligate. He descants upon religion, and acts as though there was neither a God nor a day of final retribution. He is full of beautiful sentiment, and destitute of common humanity. Rousseau, whose extreme sensibility as developed in his works of genius and imagination, touches every heart—sent his own offspring to the Foundling hospital; and it is said of Sterne—he who exhibits himself in his writings as shedding tears over a dead ass—that he left his wife and mother to struggle unaided

with poverty and misfortune, while his own life was one of heartless licentiousness. These are instances of intellectual cultivation, without moral cultivation. To know what virtue requires of us, is not to be virtuous; to know how to be benevolent, is not to be benevolent, to understand the nature and admit the authority of conscience, is not to be conscientious; to be acquainted with the obligations of Christian morality, is not to be a truly moral man. And yet this is the error into which teachers are continually falling. They seem to think that if they fill a child's head with religious and moral precepts—they are educating the religious and moral impulses of the child. But if they stop here, if they content themselves with a mere cultivation of the intellect of the child—they will find their error when that child comes to develop character in the exertions of after life. It is true, that this cultivation of the intellect is necessary. It is indeed of the highest importance; and it will in some degree act upon the moral faculties. But it will not answer as a substitute for the direct cultivation of those faculties. It is indeed necessary to know the right—but if this be the whole of education, if we content ourselves with merely imparting this knowledge of the right—we need not be surprised, if those who "know the right, should still the wrong pursue." The reason is a very plain one. The intellectual powers are developed and strengthened by practice. So are the moral powers. But the exercise of the former, does not necessarily involve the exercise of the latter. It is true, that if while the intellectual powers were occupied in an investigation of the nature of virtue or an acquisition of the rules of moral conduct, no counter influences were brought to bear directly upon the moral faculties—those faculties would receive a certain degree of cultivation and improvement through the medium of this intellectual cultivation. But we know that the reverse is the case, and that while we neglect the direct cultivation of the moral faculties and the formation of the moral character, a direct and powerful influence is exerted by passions striving for dominion, and which, unless checked by the interposing strength of moral impulse, will sweep away the feeble barriers that mere intellect may rear."

Mr. Scoles proceeded to illustrate these positions by showing the effect of example upon character, and the moral education a man received from his associations and habits of life. In the course of his argument on this point—he made the following allusions to maternal influence:—

"Why has the mother so much influence upon the character of the future man? Because she touches with gentle but skilful hand the tender strings of the young heart that vibrates at her touch. She deals with the impulses and sympathies of the child—'the father of the man.' She thus moulds its moral nature; and experience has proved, that all the after influence of intellectual cultivation imparted by school or university—all the counter tendencies of social intercourse, can never wholly eradicate what she has planted and cherished in the infant breast. Is there one that hears me who cannot testify to the truth of this, from his own experience or the admissions of others? Did not the Roman Cornelia kindle her own patriotic fire in the infant Gracchi? How much of the restless ambition and indomitable spirit of Napoleon may be attributed to the maternal influence of Letitia Bonaparte? Can we doubt that our own peerless Washington derived much of the lofty virtue and strictness of principle which so conspicuously marked his character, from the instruction and example of his dignified and excellent mother? And I never shall forget a remark which is said to have been made by the gifted but eccentric John Randolph, that the only thing which in all probability prevented his becoming an infidel at that infectuous period of feverish agitation and false philosophy, the French Revolution, was the indelible impression made by the religious teachings of a beloved mother, which were never obliterated from his mind or heart. Consequences like these, while they should convince the gentler sex of their important influence in the formation of character, and how materially they have contributed toward the production of those illustrious examples of human excellence which will live through all time, should also remind them of the great responsibility which necessarily flows therefrom, and induce them to redouble their circumspection, and their diligence in well-doing."

The lecturer spoke of the neglect of physical education, and its consequences upon the human mind as well as the human body. "What sustained mental energy," said he, "can be expected from the man whose system has been enervated by neglect of proper exercise, whose digestion is impaired, or whose nerves are unstrung?" Speaking of the effect of the disease and debility of the body upon the moral energies, he continues:—

"How much of that yielding indecision of which we see so many unfortunate examples—which disables a person from successfully combating temptation, is the result of bodily weakness? How much of that bad feeling, that irritability, that unamiable disposition which makes life wretched, may be attributed to the physical condition? How many melancholy instances are there, where brilliant and beautiful minds, assiduously cultivated at the expense of the bodily health, have consigned their possessors to a premature grave—like that gifted one of whom the noble bard so eloquently says—

'T was thy own genius gave the fatal blow,
And helped to plant the wound that laid thee low'—

when a proper attention to the laws of life might have preserved them for many years of intellectual exertion? How much of that sensitiveness and occasional imbecility, which have proved such a frequent stumbling-block in the way of success to ambitious genius—and sometimes most unhappily led it to seek required strength or temporary relief in a delusive and destructive resort to artificial stimulants—has originated in an unrestrained or imprudently-continued application of the mental faculties? In his love of study or his enthusiastic eagerness for scientific discovery, the man has forgotten that he had a body which was entitled to some portion of his care. Why will we not remember, that, although earnest, active, persevering industry is necessary to the acquisition of that intelligence and discipline, which make the profound and accomplished mind competent and prepared for extensive usefulness—yet, for successful and sustained effort with the weapons of thought, for the possession and exercise of that sound judgment and strenuous will which are essential to the achievement of any great good, we must have the strength of nerve and health of body, that will give clearness to our perceptions and vigor to our reasoning powers—and without which, we can rarely possess that firmness of resolution and consistency of purpose, essential to the formation of a decisive character."

Mr. Scoles insists that the practice of the ancients in respect to physical education, was far more rational than our own. He says, that—

"To this cause is to be attributed that superior strength of frame, and those beautiful proportions of 'the human form divine,' that yet live in the precious remains of ancient art. The Grecian sculptor modelled from the living forms that moved in native grace around him. This was the school in which he acquired that knowledge of the beautiful which his modern imitators have called *ideal*. Active exercise in the pure air and under the bright skies of that genial clime, braced the nerves, expanded the muscles, and rounded the form, while it quickened the senses and the intellect. The lively Greek was accustomed to put forth his muscular strength in bold but amicable contention; and he delighted in the full enjoyment of the green earth, the blue heavens, the sunlit sea, and all the varied glories of his own favored land. Homer's immortal Epic was pronounced to an admiring multitude collected together at their National Games; and even the young disciple of philosophy, listened to the uttered wisdom of the sage, amid the groves of the Academy."

The position that the lecturer maintains throughout his discourse is, that—

"The true education of man consists in a judicious cultivation of his intellectual, his moral, and his physical faculties; and each need a cultivation peculiar to themselves—each at the same time being dependant upon the other. A man's physical frame is in the best condition, when his intellectual and moral faculties are properly exercised; and they are again dependant for their full and healthy action upon the condition of the physical frame."

We extract a portion of his observations upon the proper mode of educating the moral powers, so as to produce the desired effect of virtuous character.

"Let us not run into the common error of supposing that we can strengthen one moral feeling, by cultivating another. By calling into exercise the feeling of benevolence, and thus imparting one virtuous habit—we do not necessarily make a man conscientious. He may have a very imperfect moral sense, and in his dealings with his fellow-men he may often fail to square his actions according to the rule of right. On the other hand, the conscientious man may be honest and just in his intercourse with his fellow-men, and yet exhibit no kindly feelings toward them. He may indeed relieve their distresses—but he may do so from a sense of duty, and not in obedience to any dictate of benevolence. He may do justice—but he may not 'love mercy.' It is true, that a person of enlightened intellect and strong benevolent feelings will endeavor to avoid any action on his part which might tend to the injury of another—and therefore he will generally act justly. But his motive will not be the same as that of the strictly conscientious man—and occasions will arise, when his very benevolence will influence his judgment, and cause him to violate right, with a view to relieve or prevent suffering, or to impart gratification. The man on the other hand, who, with enlightened intellect, has a strong sense of right and wrong and is strictly conscientious—but who has never cultivated his benevolent feelings—will be harsh and severe, when perhaps the welfare of society would have been better consulted, if he had allowed the benign influence of mercy to temper justice."

The lecturer went very fully into this subject—admitting that virtues mutually influenced and strengthened each other, but insisting upon the necessity of a direct cultivation of *each*, as the only safe and sure mode of producing a permanent effect upon character. He illustrated and proved his position by several striking examples from history, and by appeals to consciousness and experience. He also urged with great earnestness, the cultivation of the natural affections and social feelings as an element of the character, and showed the inevitable consequences

of this neglect, in producing selfishness, and a diminished degree if not a total destitution of all human sympathies. This he also sustained by familiar proofs, and a comparison between the mental and moral action of the man "in whom the natural affections are strong, and who feels the full force of every social and domestic tie"—and the monastic recluse who has no attachment except to his church or his order, and whose very piety is selfish—"gloomy and superstitious, visionary and imaginative, stern and morose, according to the temper of the man. His own opinions—his own feelings—his own day-dreams—the interest of his church, or that of the particular order to which he has attached himself, will to him be all in all; these will engross his mind and heart, and occupy his every faculty."

The lecturer proceeded to show, with great success, that such were the prominent characteristics of the persecutors and fanatics who had been distinguished for their active zeal and their indifference to human suffering; and that such must necessarily be the tendency of a neglect or extinguishment of those natural feelings and sympathies which have been given by our Creator to be exercised—not to be contemned or destroyed.

Mr. Scoles then entered into an investigation of mental alienation and moral depravity, with a view to their correction and remedy—tracing them to their sources in organic disease, bodily debility, ignorance, strength of propensity, and deficiency of moral impulse and virtuous self-control. The cause pointed out the appropriate remedy. We must exert our wisdom to discover it in each individual case. If the immediate cause of misconduct be the bodily condition—*that* must be attended to. If an appetite is gaining an ascendency over us, we must keep out of the way of temptation. If ignorance be the principal defect, we must enlighten the understanding. To keep the passions under due restraint, and to elevate and strengthen the moral energies—there must be a constant cultivation of those energies and that religious discipline which will alone give to that cultivation its full effect. These are Mr. Scoles's views, upon which he dwells at some length, and with great force. The following is his conclusion:—

"I might proceed much farther in illustration of my views, but it cannot be necessary. They are thrown out for your consideration and reflection. They are not boasted of as novel, nor presented with the view of obtaining the credit of any original discoveries. This consideration of our intellectual, moral, and physical constitution, must deeply impress us with a sense of our solemn duty and our high responsibility. Our Creator has established certain laws to which inanimate and organized matter is subjected. It is our duty to ascertain and observe them to the utmost of our ability. He has established certain laws for the government of our moral and spiritual being. We can acquaint ourselves with these laws by the study of ourselves, and the study of that revelation of his will which he has given us. It is our duty to understand and to obey them. Our responsibility for our knowledge and conduct, is in exact proportion to our capabilities, and our opportunities of improvement. To whom much is given, of him much will be required; and of his talent, to whom but a single talent has been intrusted, doubtless a strict account will be demanded by Him that judgeth the heart. We are responsible for the cultivation of our intellect, the care of our bodies, the development of our moral powers, and the faithful performance of all those manifold duties that grow out of our relations to God and to our fellow-men. It may be asked, whether this is not imposing upon feeble humanity an impossible task. I have admitted that perfection is not attainable—but is that any reason why we should not strive to approach it as nearly as human infirmity will permit? How near we could come, were we judiciously to put forth and exert to the utmost every faculty of our being, not one of us can say—and it is an encouraging doctrine of our faith, that divine assistance is extended to all who sincerely and earnestly seek it. I would observe, in conclusion, that the theory which I believe to be true, and have endeavored to sustain, is in accordance with the discoveries of physiology, and the dictates of sound philosophy—and, what is of still higher importance, in perfect harmony with Divine Revelation. I do not ask any one to adopt these views, but would say to them, in the language of the immortal Bacon, 'Hear, not to contradict and confute, nor to believe and take for granted, or to find talk and discourse, but to *weigh* and *consider*.'"

SELF-INSTRUCTER IN PHILOSOPHY.*

No. I.

Under this head, we propose to give a series of familiar essays, compiled from popular authors, on the most important principles of Natural Philosophy, in as concise a manner as possible, and at the same time make them perspicuous and comprehensive. We shall avoid, as far as the subject will allow, all technicalities, and adapt

* In the fifth volume of the Magazine may be found a series of articles on those particular branches of Natural Philosophy which relate to mechanics. This series will be more elementary.

our language to the capacities and comprehension of children. Natural Philosophy is as intimately connected with all our domestic avocations, as it is with the more lofty and refined pursuits of science; and it is vitally important for each one to understand its leading principles if he wish for success upon the farm, the ocean, or the workshop. We will commence by noticing

THE GENERAL PROPERTIES OF BODIES.

Matter is the general term for every created thing, whether solid or fluid. The paper of which this Magazine is formed, the water we drink, and the air we breathe, are all included in the general term, *matter*. There are certain properties, called *essential* or inherent, which seem to be peculiar to all bodies; these are—

1. *Impenetrability*, or the property which bodies have of occupying a certain space, to the exclusion of every other body. A *liquid* may be more easily removed than a *solid*, yet it is no less substantial and *impenetrable;* for it as impossible for a liquid and a solid to occupy the same space at the same time, as it is for two solid bodies to do so. For example; if you drop a marble into a tumbler full of water, the water will flow over to make room for the marble. The air is likewise impenetrable, as may be seen by taking a vial and plunging it under water in a horizontal direction. The air is forced out in bubbles to make room for the water. Plunge a goblet vertically into a basin of water, and it will not become filled with water, though it will rise to some height within the goblet, owing to the compressibility of the air. But, as air and water cannot occupy the same space at the same time, a certain portion of the goblet will contain air, to the exclusion of the water. All force-pumps, such as fire-engines, &c., operate by the combined principles of the *impenetrability* of both air and water, and the *compressibility* of the former and the incompressibility of the latter. A nail, driven into a piece of wood, does not *penetrate* the wood, but displaces so much of it, as the space itself occupies; and the reason why wood does not enlarge by this operation, as in the case of the water in the tumbler when a marble is dropped into it is, because it is a porous substance like a sponge, and may be compressed, or its particles squeezed closer together.

2. *Extension*. By extension is meant *length*, *breadth*, and *depth* or *thickness*, and these are common to all bodies. Height and depth are the same thing: in measuring a box, for instance, when *upward* we call it height; when *downward* we call it depth. The limits of extension constitute *figure* or *form*, either regular or irregular, as a perfect sphere, or an irregular piece of a broken stone. Minerals are generally in the form of crystals, having many sides and angles; vegetables more generally assume curvilinear forms; while every production of art is regulated in its form by the taste and caprice of man. Many irregular masses of minerals are aggregated of minute crystals of a regular and beautiful form.

3. *Divisibility*, or a susceptibility of being divided into an indefinite number of parts. If a grain of sand is cut into two parts, each part is as perfect in itself as was the grain before divided; and if it be reduced, by grinding, to an almost impalpable powder, each particle of that powder is as perfect, and contains as many halves and quarters, as did the original large grain. This divisibility of matter is strikingly illustrated by the simple process of sweetening tea with sugar. That which before was a solid and visible, is, when dissolved in a cup of tea, so divided and distributed through the dissolving fluid, that it becomes invisible to the eye, though the taste may detect its presence. So with perfume. Musk is so extremely divisible, that a single grain will diffuse an odor through a whole room, without any apparent diminution of quantity; and yet, did not some particles of the musk come in contact with our organs of smell, we should not perceive it. But, though so minutely divided as many substances may be, not a single atom is destroyed; and it is out of the power of man to annihilate a single particle of created matter. When a large quantity of fuel is reduced to ashes, how little of the original bulk is left! Yet not a particle has been *destroyed*. The fire acted as an agent in dividing the particles, and what of the bulk is wanting in the small heap of ashes before us, has passed off in the form of smoke, gas, or vapor. Let this be remembered as an unalterable law of nature—*all substances may be divided and changed in form and color, but not a single atom can be annihilated.*

4. *Inertia* or inactivity, is the term applied to the resistance which bodies make to a change from a state of rest to motion, or from motion to a state of rest. All bodies are equally incapable of changing their state, whether of motion or rest, but depend entirely upon foreign action to produce this change. A ball thrown from the hand or propelled with a bat cannot stop of itself any more than it can voluntarily move when lying quiet. When thrown from the hand, it meets with the resistance of the air, and is drawn to the earth by the attraction of gravitation. Destroy the resistance of the one and the attraction of the other, and the ball would move onward in a tangent or straight line for ever, if it did not come in contact with some object. This property of *inertia* is common to all bodies.

5. *Attraction*. This property appears to be common to all bodies, of every size and form, and explains the manner how *matter* composed

of infinitely small particles, forms in large masses. Every particle possesses the power of *attracting* or drawing toward it other particles; but in particles very minute, this influence is so limited as not to be perceptible except where they are (or seem to be) in actual contact. When this is the case, they adhere or stick together, and this power is called the *attraction of cohesion*. Thus all solid bodies, like paper, a table, or a piece of marble, are rendered compact by this kind of universal attraction. Could this power be destroyed, the whole earth with all that is upon it would dissolve into impalpable powder. The particles which compose fluids possess this power to an extent far less than solids, and this gives them their loose or fluid state. The difference seen in the *thickness* of fluids, arises from this fact; the particles which compose molasses having greater cohesive attraction, than those of water, the former is less fluid. The atmosphere possesses still less of cohesive attraction than water; and all the attempts of science to compress the particles of air, so as to make them cohere, have been in vain. Did they cohere, the air would no longer be subservient to our use in breathing. There *is* an attractive influence between the particles of the atmosphere, but it is very slight.

The difference in bodies, usually called hard and soft, and thick and thin (fluids), depends entirely upon the *attraction of cohesion*, and is technically called *density* and *rarity*. Density denotes the degree of closeness and compactness of the particles of a body. Rarity is the contrary, and denotes thinness and subtilty. Thus of fluids, quicksilver is the most dense, and ether the most rare.

NATURAL HISTORY.

WEAVER AND TAILOR BIRDS.

The captain of a ship, who had collected about forty birds from Madagascar, Senegal, and other parts of the African coast, brought to France two of the weaver orioles (*Ploceus textor*, Cuvier), which he called Senegal chaffinches, and which are the only individuals we believe hitherto described by naturalists. They appeared to be of different ages, the elder having a kind of crown, which appeared in sunlight of a glossy golden brown color; but at the autumnal moult this disappeared, leaving the head of a yellow color, though its golden brown was always renewed in the spring of every successive year. The principal color of the body was yellowish orange, but the wings and tail had a blackish ground. The younger bird had not the golden brown on the head till the end of the second year, which occasioned the excusable mistake of supposing it to be female, as it is one of the characteristics of female birds to preserve for a long time the marks of youth. The two birds were kept in the same cage, and lived at first upon the best terms with one another, the younger generally sitting on the highest bar, holding its bill close to the other, which it answered by clapping its wings, and with a submissive air.

Having been observed in the spring to interweave chickweed into the wirework of their cage, it was imagined to be an indication of their desire to nestle; and, accordingly, upon being supplied with fine rushes, they built a nest so capacious as to conceal one of them entirely. They renewed their labor on the following year; but the younger, which had now acquired its full plumage, was driven off by the other from the nest first began. Determined, however, not to be idle, it commenced one for itself in the opposite corner of the cage. The elder, however, did not relish this, and, continuing his persecution, they were separated. They went on working at their several buildings; but what was built one day was generally destroyed the next. Latham tells us that one of them, "having by chance got a bit of sewing silk, wove it among the wires, which being observed, more was put into the cage, when the bird interlaced the whole, but very confusedly, so as to hinder the greater part of one side of the cage from being seen through: it was found to prefer green and yellow to any other color."

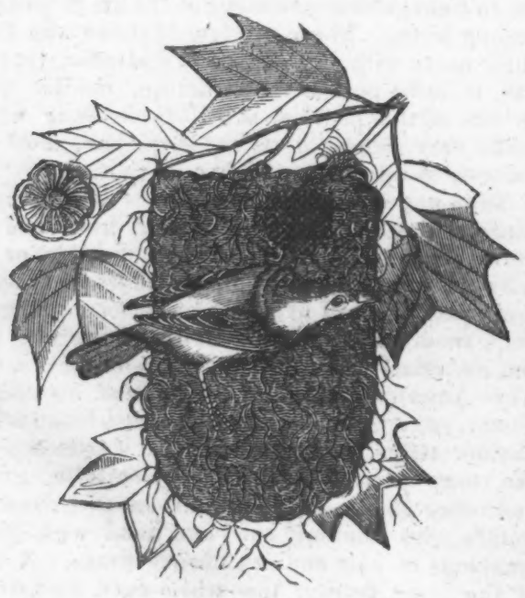
It seems difficult to conceive in what manner a bird could ever be able to interweave materials in the manner just described, with no other instrument than its bill, for it does not appear that the feet are brought into use in the work. In every species of weaving practised by our mechanics, the cross thread or weft is passed between the warp or straight threads by means of a shuttle which goes completely through; but it is very obvious that a bird could not use its bill in this manner, much less its entire body, which, in all known instances of weaver-birds, is much too bulky for this purpose. We need not, however, go to Senegal for specimens of the art of weaving among birds. There are few of those who build their nests with any degree of neatness, that do not, in some part of the structure, exhibit more or less of this peculiar skill. Even those which make very slender nests are sometimes most solicitous to interweave their materials.

Take any of the nests of the common small birds, which line the interior with hair, and remove the outer basketing of hay or roots, or the feltwork of moss and wool, and there will remain a circular piece of haircloth of various workmanship, according to the ingenuity of the bird and the materials which it has been able to procure. The American kingbird (*Tyrannus intrepidus*, Vieill.) first forms a sort of basket-framework of slender twigs, and the withered flower-tops of the rossy yarrow (*Achillea asplenifolia*, Pers.) and other plants, which are afterward woven together with wool and tow, and lined with interweavings of hair and dry fibrous grass. A bird of the same family, the white-eyed fly-catcher (*M. cantatrix*, Bartram), constructs a neat conical hanging nest, "suspended," says Wilson, "by

the upper edge of the two sides, on the circular bend of a prickly vine, a species of smilax that generally grows in low thickets. Outwardly it is constructed of various light materials, bits of rotten wood, fibres of dry stalks of weeds, pieces of papers, commonly newspapers, an article almost always found about its nest, so that some of my friends have given it the name of the politician; all these substances are interwoven with the silk of caterpillars, and the inside is lined with fine dry grass and hair."

But by far the most celebrated nest of this kind, is that of the Baltimore starling (*Icterus Baltimore*). We shall give Wilson's account entire:—

"Almost the whole genus of orioles," says he, "belong to America, and, with a few exceptions, build pensile nests. Few of them, however, equal the Baltimore in the construction of these receptacles for their young, and in giving them, in such a superior degree, convenience, warmth, and security. For these purposes he generally fixes on the high bending extremities of the branches, fastening strong strings of hemp or flax round two forked twigs corresponding to the intended width of the nest; with the same materials, mixed with quantities of loose tow, he interweaves or fabricates a strong, firm kind of cloth, not unlike the substance of a hat in its raw state, forming it into a pouch of six or seven inches in depth, lining it substantially with various soft substances, well interwoven with the outward netting, and, lastly, finishes with a layer of horsehair, the whole being shaded from the sun and rain by a natural penthouse or canopy of leaves. As to a hole being left in the side for the young to be fed and void their excrements through, as Pennant and others relate, it certainly is an error: I have never met with anything of the kind in the nest of the Baltimore. Though birds of the same species have, generally speaking, a common form of building, yet, contrary to the usually-received opinion, they do not build exactly in the same manner. As much difference will be found in the style, neatness, and finishing of the nests of the Baltimores as in their voices. Some appear far superior workmen to others, and probably age may improve them in this as it does in their colors. I have a number of their nests now before me, all completed and with eggs. One of these, the neatest, is in the form of a cylinder, of five inches diameter, and seven inches in depth, rounded at bottom. The opening at top is narrowed by a horizontal covering to two inches and a half in diameter. The materials are flax, hemp, tow, hair, and wool, woven into a complete cloth, the whole tightly sewed through and through with long horsehairs, several of which measure two feet in length. The bottom is composed of thick tufts of cowhair, sewed also with strong horsehair. This nest was hung on the extremity of the horizontal branch of an apple-tree, fronting the southeast, was visible one hundred yards off, though shaded by the sun, and was the work of a very beautiful and perfect bird. The eggs are five, white, slightly tinged with flesh-color, marked on the greater end with purple dots, and on the other parts with long hairlike lines, intersecting each other in a variety of directions. I am thus minute in these particulars from a wish to point out the specific difference between the true and bastard Baltimore, which Dr. Latham and some others suspect to be only the same bird in different stages of color.



Baltimore Starling (*Icterus Baltimore*), and Nest.

"So solicitous is the Baltimore to procure proper materials for his nest, that, in the season of building, the women in the country are under the necessity of narrowly watching their thread that may chance to be bleaching, and the farmer to secure his young grafts, as the Baltimore, finding the former, and the strings which tie the latter, so well adapted for his purpose, frequently carries off both; or should the one be too heavy and the other too firmly tied, he will tug at them a considerable time before he gives up the attempt. Skeins of silk and hanks of thread have been often found, after the leaves were fallen, hanging round the Baltimore's nest, but so woven up and entangled as to be entirely irreclaimable. Before the introduction of Europeans no such material could have been obtained here; but, with the sagacity of a good architect, he has improved this circumstance to his advantage, and the strongest and best materials are uniformly found in those parts by which the whole is supported."

One of the prettiest of the woven nests is figured and described by Vaillant in his splendid work on African birds, though he is doubtful what species of bird was the mechanic. The following is his account of this beautiful nest:—

"It is, I believe," says he, "the nest of the tchitrec (*Muscicapa cristata*, Latham); for though I have never captured the bird of this species on the nest, and am not therefore certain of the fact, my good Klaas, a faithful if not a profound observer, assured me that it was. In one of our journeys through a wood of mimosas, in the country of the Caffres, he discovered and brought me this nest, having seen, he said, and particularly observed, a male and female tchitrec occupied in constructing it. It is remarkable for its peculiar form, bearing a strong resemblance

Nest of the Tchitrec (*Muscicapa cristata*, LATHAM).

to a small horn, suspended, with the point downward between two branches. Its greatest diameter was two inches and a half, and gradually diminishing toward the base. It would be difficult to explain the principle upon which such a nest had been built, particularly as three fourths of it appeared to be entirely useless and idly made; for the part which was to contain the eggs, and which was alone indispensable, was not more than three inches from the surface. All the rest of this edifice, which was a tissue closely and laboriously woven of slender threads taken from the bark of certain shrubs, seemed to be totally useless. The interior of the nest was not furnished with any sort of soft material, such as down, wool, or hair, but as the female had not laid her eggs when Klaas brought it to me, it is probable that the nest was not quite finished; a fact indeed proved by the birds being still at work at the time.

Nest of the Tailor-bird (*Sylvia sutoria*, LATH.), from Pennant's figure.

In a previous number we gave an account of the Tailor-bird (*Sylvia sutoria*), and its manner of constructing its nest. We are now enabled, in connexion with the foregoing account of a description of the bird, to give a pictorial representation of the Tailor-bird's nest.

CANVASS-BACK DUCKS, AND THE MANNER OF SHOOTING THEM.

AMONG all the varieties of the feathered creation that are generally considered edible—or, rather, that are served up at the choicest American tables on festive or ceremonial occasions—not one, neither the delicate reed-bird frequenting the Delaware and Maryland marshes, the high-flavored "pinnated" grouse, nor that ever-vaunted American progeny, the wild turkey, takes precedence of, or has more admirers than the *Anas Valisineria*, or canvass-back duck. These birds, like the great bulk of the duck species that frequent the lakes, bays, and rivers, of the United States, do not breed in any section of the country; but after passing a few months of the winter in the less rigorous climate of the middle states, when spring returns they take their departure for the more northerly regions of the American continent, where, on the desolate islands and the arctic shores, they breed and spend the short summers of those higher latitudes.

The canvass-back is so named from the color of its plumage, the upper parts being of a canvass color or dusky-white. It has been supposed by some to be the same species as the pochard (*anas ferina*) of England; but those who have had opportunities of examining them both, will have had no difficulty in ascertaining the fact that they are perfectly distinct varieties of that numerous family to which they both belong.

These birds usually make their appearance in the latter part of October, but they are not found in much plenty until later in the season, and even then they are seldom very numerous. Neither are there many situations that they are known to frequent regularly; for although a few of them are sometimes scattered along the bays and creeks of the eastern states, their favorite haunt is the Chesapeake bay, and the mouths of those rivers emptying thereinto, particularly the Susquehannah. Coveys of them are, however, frequently found in the neighborhood of New York, in the various creeks along the shores of New Jersey, and in the Delaware bay and river; but still the waters of the Chesapeake appear to be their favorite haunt. This probably is owing to a species of grass that grows in great abundance on some of the sand-banks in the Chesapeake bay, which are always covered with water, even at ebb-tide; for it is a well-ascertained fact that this species of grass is the principal cause of attraction.

The canvass-back is naturally a very shy and wary bird; so that without the exercise of much caution and ingenuity, and patience, too, on the part of those engaged in the pursuit of them, they need hardly hope to meet with success. A decoy-dog is frequently used with good success. These dogs are trained especially for this purpose, and seem to understand the sport as well as their masters. They will swim out into the water to within a moderate distance of the banks where the ducks feed, and there frolic about in order to attract the attention of the birds; when, having succeeded in exciting their curiosity, they attempt to decoy them toward the shore. Frequently a piece of red cloth is fastened upon the back of the decoy-dog, called a "saddle;" which evidently renders him an object of greater curiosity to those simple birds, that appear to have, like several other species of the feathered tribe, a peculiarly partiality, or antipathy, for the color of scarlet. When the dog has succeeded in decoying them within gun-shot distance, a low whistle is the signal for his getting out of the way of danger; when all the firearms possessed by the parties in ambush are instantly discharged among the astonished birds. Sometimes a boy with a small punt or canoe is kept in attendance for the purpose of picking up the mortally-wounded birds; while the decoy-dogs are very expert in capturing the wounded and bringing them to shore. Those, however, that are but slightly wounded, are seldom captured, since the canvass-back dives with uncommon quickness, and remains a long time under water. During the day they are seldom seen in large flocks; but in the evening they begin to congregate, and roost upon the water in numerous companies; separating again as daylight returns.

Some persons occasionally go in pursuit of these much-esteemed birds during the still moonlight nights, embarking in a boat with the oars muffled, and taking advantage of the tide or current setting toward the place where the ducks are known to be roosting. They never, however, appear to be found without their sentinels, and, consequently, are seldom approached very close without taking the alarm. However, where there are half a dozen loaded pieces that can be discharged in a few seconds into the midst of them, as they mount upon the wing, sometimes these *sportsmen*, if "duck-hunters" may be so called, are rewarded with several pairs of these valuable birds. But this night-shooting answers but an indifferent purpose in the end, for there is nothing that alarms them so much as being attacked by night, which has the effect of soon banishing them from their favorite haunt.

"I once," says a correspondent of the Penny Magazine, "accompanied a person belonging to Hâvre-de-Grace, a small town at the head of the Chesapeake bay, in an excursion to the canvass-back ground, as those banks are called where they commonly feed. Four of us embarked in a pretty large boat, carrying a two-pounder swivel in its bows, with four or five long duck-guns loaded in its stern. In the centre of the vessel were several branches of evergreens placed perpendicularly, for the purpose of screening us, and to give us the appearance of a small floating island covered with bushes. We bore down quietly and steadily upon a pretty large flock—not exclusively composed of canvass-backs, but consisting of ducks of several varieties. The person who had the management of the swivel, which was heavily loaded with swan-shot, seemed to understand his duty perfectly; for when we had approached within 60 or 70 yards of the ducks, one of the party at a preconcerted signal discharged a fowling-piece for the purpose of making them all take wing at the same time, and they had no sooner taken the hint than the swivel and our other guns were instantly discharged among them, with fully as much effect as I had anticipated, for when the smoke had cleared away we managed to pick up more than thirty birds, about one half of which were canvass-backs. During several hours that we continued in the bay, we had only one other opportunity of getting within gun-shot of them; and at this second discharge of our whole stock of firearms we killed no more than a dozen birds, a few only of which were canvass-backs."

These birds are so much esteemed, that they sometimes fetch two dollars a pair, and when in great abundance they are worth seventy-five cents each. A plump canvass-back weighs about three pounds.

Sometimes the winter is so severe that those parts of the bay the ducks are in the habit of frequenting become closed with ice, and consequently they are prevented from procuring their favorite food. Should the frost continue for some time, the "duck-hunters" cut openings in the ice, placing decoy-ducks close by them, and the flock of canvass-backs attracted to these openings, in quest of their favorite food, is sometimes very great, when considerable slaughter is made among them.

ON THE EFFECTS OF ARTS, TRADES, AND PROFESSIONS, AS WELL AS HABITS OF LIVING, ON HEALTH AND LONGEVITY.

BY CHARLES A. LEE, M. D., NEW-YORK.

No. IV.

From the statistical calculations contained in a former essay, it appeared that large cities are much more inimical to health than the country; and we remarked that this was owing chiefly to a vitiated atmosphere. Instead of a mortality of 1 in 70, which is about the average ratio in New England, we have in this city, taking an average of sixteen years, 1 in 36. More than 25 per cent. of the whole number die under 1 year, and more than 50 per cent. under 20 years. In a paper on the medical statistics of this city, published in the 19th vol. of the American Journal of the Medical Sciences, we thus remarked: "Out of 23,525 deaths in the city of London in 1829, 9,057, or 38.5 per cent., died under 5 years of age, and 28.52 per cent. under 2 years. In Paris, during the year 1818, the number of deaths was 22,421, whereof 3,942, or 17.58 per cent., were

under the age of 1 year, and 24,86 per cent. died before the expiration of the 2d. In Philadelphia, during a period of twenty years, the deaths of children under 1 year old were more than a fifth of the whole number; and from birth to 2 years, rather less than one third, or as 1 to 11 of the whole number. The proportion of deaths in New York under that age is somewhat greater. A large proportion of deaths among children, during the warm season, is caused by cholera infantum, or *tabes mesenterica*, which is perhaps but a modification of the same disease. That this is mainly produced by a vitiated atmosphere, is evident from the fact that children rapidly recover from it when removed into the country. It is deeply to be regretted that there are no laws to prevent the undue crowding of population, which is doubtless one of the most influential causes of the disproportionate mortality of large cities. While the construction of our houses is strictly guarded by our municipal authorities, so as to protect them against conflagration, the preservation of life and health, by preventing them from being turned into manufactories of pestilence by too dense a population, seems to be considered as a matter of very little consequence."

It has been generally supposed that *scurvy*, both on land and sea, is produced by improper food, such as an exclusive diet of salt provisions; but it is now pretty well established that it may also be caused by breathing an impure atmosphere, connected with a want of proper and invigorating exercise and neglect of cleanliness. For example: in 1823, the scurvy broke out in an alarming form in the Millbank penitentiary, London, affecting in a greater or less degree all of the 850 convicts then inmates of the establishment, of whom 450 were on the sick-list at one time. An investigation was undertaken by order of Parliament, by which it appeared that the chief cause consisted in imperfect ventilation. From the same cause, the pauper children at the Long Island Farms have suffered immensely, and are at this moment generally in a scorbutic state. Owing to this vitiated condition of the solids and fluids, they are extremely exposed to epidemic diseases, by which from time to time large nnmbers of them have perished.

The late Mr. Eddy, in his account of the state-prisons of this state, has also mentioned many instances of scurvy arising from improper food, and particularly, confinement in an impure air.

The manner in which an impure atmosphere occasions this affection is sufficiently obvious. We have mentioned that the digestive organs are the primary and chief seat of derangement from this cause. The debility under which they labor is soon communicated to the lungs, the brain, the heart, and the skin. The secretions accordingly are imperfectly elaborated, and deficient in quantity; there is a loss of sensorial energy, and a weakened condition of the circulatory or vascular system, occasioning a smaller formation of fibrin, and diminution of carbon from the lungs. The consequence is a looser texture, and deeper hue of the blood, and a soft, relaxed condition of the solids.

The fact is thus abundantly established, that an impure atmosphere is one of the most efficient causes in the production of disease; and it seems no less evident that the digestive and nervous systems feel its influence even more than the lungs themselves. Hence the astonishing number of patients laboring under diseases of the digestive organs, and the numerous deaths by convulsions among young children in cities.* Although the deaths from pulmonary affections are considerably numerous, being about 20 per cent. of the whole number, yet it is found that they bear quite as large, if not even a larger proportion, in the country; while those from diseases of the digestive organs are comparatively few. For example: while the deaths from consumption in New-York are only in the ratio of 1 in 9 of the American population, in New England they are as high as 1 in 6. Thackrah, who has written with great intelligence on this subject, believes that the progress of consumption is much more rapid in the pure air of the country than in the smoky atmosphere of crowded cities.† The same writer estimates that not 10 per cent. of the inhabitants of large towns enjoy *full* health. The complexion, he states, is usually pallid, and the tongue shows that digestion is disordered and imperfect. Most individuals have either actual disease of some organ, or an evident disposition to disease.

It is impossible within the limits of our present essay to notice all those classes of operatives, and others who suffer from confinement and insufficient ventilation. Such as have chiefly come under our own observation, beside those already mentioned, are *cotton and woollen manufacturers*, *tailors*, *milliners*, *dressmakers*, *tailoresses*, *straw-bonnet makers*, &c., most of whom are crowded into small apartments, and employed ten or twelve hours in a day. From the constrained and bent position in which they generally pursue their work, neither respiration, circulation, nor digestion, can be well performed, and we consequently find them pale, and suffering more or less from pains in the chest and side, palpitation, indigestion, and nervous symptoms; and very fre-

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* From January 1st, 1819, to January 1st, 1835, embracing 16 years, there were 5,461 deaths from convulsions in this city.

† Dr. Clark, in his able work on consumption, remarks: "Next to improper or deficient diet, I would rank an imperfect supply of pure air, as a cause of tubercular phthisis. The assimilation of the chyle or nutritious element of our food is completed during its circulation through the lungs, and by being brought into contact with the atmospheric air in the process of respiration. It is therefore quite evident that when the respiration is imperfectly performed, from a defective action of the respiratory organs—the consequence of disease, of a sedentary life, or of unnatural position of the body—or from an imperfect supply of pure air, perfect assimilation cannot be effected. In the confined districts of large and populous cities, where neither pure air nor sufficient light can enter, in consequence of the obscure and overshaded sites of the buildings, the food of the inhabitants cannot be assimilated, even though the supply be unexceptionable. A sensible writer on scrofulous diseases considers impure air as their only real cause: other causes may assist; but this he considers essential to their production."

Again: "There can be no doubt that the habitual respiration of the air of confined and gloomy alleys in large towns, as well as that of many manufactories, of workhouses and schools, and of our nurseries and many sitting-rooms, is a powerful means of augmenting the hereditary predisposition to scrofula, and of inducing such a disposition *de novo*. Almost all the children reared in the workhouse, of this country, and in similar establishments abroad, become scrofulous—more, I believe from the impure atmosphere which they breathe and the want of sufficient exercise, than from defective nourishment."

quently they perish from consumption. Of the large number of girls from 10 to 20 years of age, who come to this city from the country to learn the millinery, mantuamaking, and tailoring business, but few retain their former degree of health for any length of time. The rooms in which they work, beside being too much crowded and insufficiently ventilated, are in the winter season kept at too high a temperature; the consequence of which is, frequent colds and catarrhs. In a few months they lose their former freshness, and exchange the florid hue of health for a pale and sickly aspect. From constant employment of their eyes in fine sewing, they frequently are afflicted with opthalmia, which is often serious and obstinate. Indeed, there is no class that suffers more from confinement and insufficient ventilation than the above classes in our large cities. If they would enjoy good health, their hours of labor should be materially reduced, their work and sleeping-rooms better ventilated, and they should especially take more exercise in the open air. We might also with propriety mention our retail shop-keepers and dry-goods men, who stand behind their counters from morning till night, doing what in other countries is considered women's work; and indeed it would almost seem an act of supererogation to endow man with such noble physical powers, were it his allotted sphere to cut tape or measure silk and calico! This is an employment, it must be acknowledged, for which females are peculiarly well fitted; and there are thousands now out of employment, to whom such an occupation would afford a competent support, and indeed confer absolute happiness. And in making the exchange for other and more active pursuits, those men now engaged in the retail mercantile business would not only find their health and comfort enhanced, but they might reasonably expect to attain to a much more advanced age than they can now rationally hope for.

Although we have stated that the operatives in our cotton and woollen manufactories suffer considerably from confinement and an impure atmosphere, yet the evils connected with these establishments in this country are few compared with those of Great Britain. The "factory systems" of the two countries are indeed on an entirely different plan. In our manufactories the machinery is mostly tended by unmarried females from 14 to 30 years of age, a majority of whom are over 20; and the average time which each one devotes to the employment is about 2 or $2\frac{1}{2}$ years. About 12 hours in the 24 are devoted to labor. A few, perhaps 5 to 8 per cent., find the business inconsistent with their health, and return in a few weeks to their homes. Some find it perfectly safe and agreeable, and remain permanently; but the larger proportion are able to continue but two or three years before symptoms of ill health admonish them to retire. The morals of our manufacturing villages will not suffer by a comparison with those of any other.

In England however it is far different. There the looms and spindles are tended by boys from 7 to 14, who formerly were employed from 13 to 16 hours per day: at present, a period of 8 hours is allowed for all under 13, and one of 12 for those between 13 and 18. Now, in following a pair of mules spinning cotton yarn of No. 40, it is found that a boy takes 4,400 stretches daily, or 35,200 yards; making a distance of 20 miles which he walks in the course of 8 hours; while in 1815, in following the same machinery, the distance walked over was only 8 miles; showing, that though the hours of labor may have been diminished by Parliamentary enactment, yet that the spinner's toil has not proportionably diminished.

In 1835, the whole number of persons employed in cotton factories in England was 220,134; four times as many as in 1818. Of this number, 94,287, were between the ages of 7 and 18, and 125,877 above the latter age. Now, it is well known that persons who have already attained their full growth, and particularly those who have reached nearly to the meridian of life, seldom experience the deleterious effect of confinement, under the same circumstances, to such a degree as those in early life.

Dr. Copland remarks, that when the subject was brought before Parliament by Sir Robert Peel, Mr. Owen, of New Lanark, stated, respecting the children employed in his manufactory, that although they were extremely well fed, clothed, and lodged, looked fresh, and to a superficial observer seemed healthy by their countenances, yet their limbs were generally deformed, their growth stunted, and they were incapable of making much progress in the first rudiments of education. Sir Astley Cooper, in giving his testimony, also stated, that the result of confinement is not only to stunt the growth, but to produce deformity. The same writer observes, that every traveller in countries, the population of which consists chiefly of those whose avocations bring them much in the open air, or in agricultural districts, must have remarked not only the much more fully developed frames and larger lower extremities of the inhabitants of those parts, but also the more phlogistic or inflammatory character of their disorders, and their greater vital resistance and powers of restoration when exposed to the causes or suffering from attacks of disease, than are manifested by the inhabitants of crowded manufacturing towns.

Dr. Copland truly remarks, that not only is confinement in itself detrimental to the frame, particularly during the epochs of development of the various structures of the body, when air and exercise are nearly as requisite as food to their perfection, but the construction of the apartments, the want of ventilation, the accumulation of animal effluvia, and the moral depravation consequent upon continued assemblages of persons little under physical or moral control, essentially increase its injurious effects, and co-operate with it in impressing an asthenic character on the frame, in disposing to the formation of tubercles and to the strumous diathesis, in depressing the vital energies and mental manifestations, and consequently in disposing the body the more to the usual exciting causes of disease, and the mind to vicious habits and indulgences.

The extremely detrimental tendency of the

factory system of England, previous to the Parliamentary investigation in 1819, will appear from the simple statement of a few facts. Many of the children subjected to labor of 16 hours a day, including an hour's intermission for dinner, were no more than 5 or 6 years of age, and from this upward; and they were compelled to work incessantly as long as the machinery was in motion, during which time they were not allowed to sit down nor leave the factory. They often complained of fatigue and aching limbs; and in this state of exhaustion, toward the close of the day, they were beaten by the spinners or overlookers, or even by their own parents, that blows might supply the deficiency of strength.

In most cotton factories, we are told that during the greater part, and often the whole of the time nominally allotted for dinner, the children were occupied in cleaning the machinery; no time was allowed for the breakfast or afternoon meals, which were snatched in mouthfuls during the progress of uninterrupted labor; the refreshments not unfrequently remaining untouched till they became cold, and covered with dust and dirt from the cotton-flyings. It appeared, moreover, that the temperature in many cotton mills was from 75 to 80 degrees, in others from 80 to 85, and occasionally as high as 90.

The consequences of such a life may be easily imagined. Accordingly, we find it to have been proved before the committee of Parliament, that the number of operatives above the age of 40 is incredibly small. During a great "turn-out" or *strike* of operatives in 1831, of 1,665 persons whose ages ranged from 15 to 60, 1,584 were below 45; *three* only had attained a period between 55 and 60; and not more than 51 between 45 and 50 were counted as fit for work!

Mr. Macnish, a very intelligent witness, stated, that from an actual examination of 1,600 men in the factories of Renfrew and Lanark, he found that no more than *ten* had reached 45 years of age, and these were retained by the special indulgence of their masters. Before they arrive at this age, they are too infirm to produce the required quantity. Their eyesight also fails, and then they are turned off, and younger men employed in their places.

We state these facts, because we conceive that they have a very important bearing upon the subject under consideration, as showing in a very striking light, the pernicious influence of confinement and insufficient ventilation upon the healthy development of the physical constitution of man.

It would be appropriate perhaps in conclusion, to offer some additional remarks on the best mode of ventilating public and private buildings; but as this is a subject belonging peculiarly to the province of the architect and engineer, we shall leave it, with the hope that some of your able correspondents may ere long do it ample justice through the pages of the Repertory.

Am. Rep. of Arts.

In cases of doubtful morality, it is usual to say —Is there any harm in doing this?

Answer. Is there any harm in letting it alone?

WOMAN'S GENIUS.

If a woman's heart have yearnings,
Which time alone can still;
If the loftiest aspiration
Her restless bosom fill;
If from the fountain of her breast,
Flows every lofty thought;
And with all-glorious imagery
Her heart and mind be fraught:

Must she because a woman,
Lay all those gifts aside—
Those treasures of the mind and heart,
Which ought to be her pride?
Must she smother every feeling
That burns to be expressed,
And turn aside that fount of thought,
Which gushes from the heart?

Must she keep her thoughts unuttered,
Must her genius be confined,
Must she draw a thick and darkening veil
O'er the beauties of her mind,
Because by common minds 't is thought
That woman quits her sphere,
When she, in point of intellect,
Steps forth as man's compeer?

Why did her Maker thus endow
A woman's soul with power?
If she must all these gifts conceal,
Were 't not a useless dower?
Because a woman has the power
To climb Parnassus' hill,
And at the stream of Helicon
Her thirsty soul to fill—

It does not render her unfit
For the social ties of life,
Nor prevent her from fulfilling
Her duty as a wife.
Oh! then, let woman strive her best
To improve the talents given,
But, in deep humility of heart,
With gratitude to Heaven.

MEMORY.

We will revive those times, and in our memories
Preserve, and still keep fresh, like flowers in water,
Those happier days; when at our eyes our souls
Kindled their mutual fires, their equal beams
Shot and returned, till linked and twined in one,
They changed our hearts together.

Denham.

Had memory been lost with innocence,
We had not known the sentence, nor the offence;
'T was his chief punishment, to keep in store,
The sad remembrance what he was before.

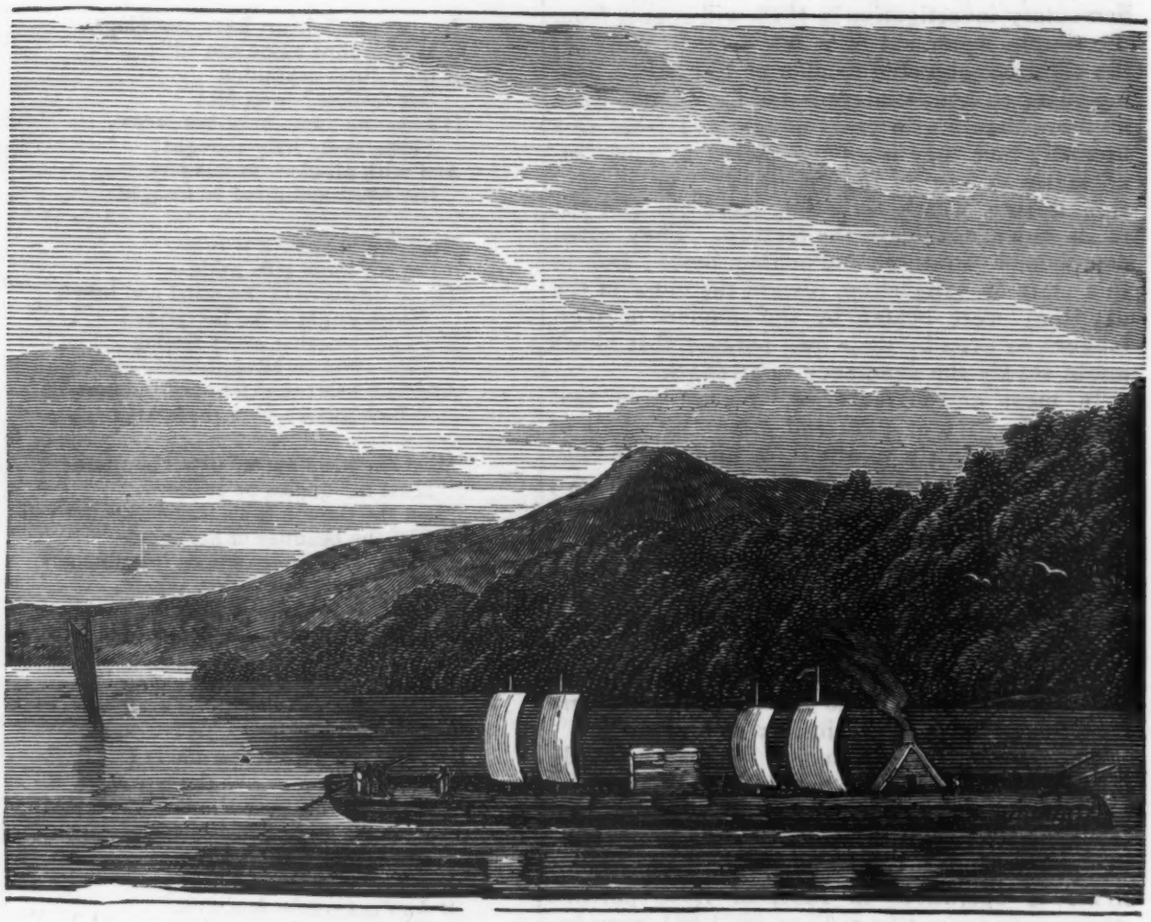
Denham.

Remembrance wakes with all her busy train,
Swells at my breast, and turns the past to pain.

Goldsmith.

On this dear jewel of my memory
My heart will ever dwell, and fate in vain,
Possessing that, essay to make me wretched.

Russel.



View of a Timber Raft, on Lake Champlain.

LAKE CHAMPLAIN.

Lake Champlain lies between the states of Vermont and New York, occupying the great glen, by means of which, the Hudson pierces the mountain chains. It is one hundred and forty miles in length, and varies in breadth, from half a mile to sixteen miles. Its surface covers not less than six hundred square miles, and its depth, like that of the higher lakes of the St. Lawrence—into which it has an outlet by the river Sorel—is in many places prodigious. It is in reality the lower plateau of a deep vale. Its direction is nearly north and south, and its bosom is interspersed with numerous islands. The largest of its general bays and headlands, are South bay and Cumberland head.

Ticonderoga and Crown Point, on the west shore, have been the theatre of important public events, which will long be remembered by the Americans. The waters of the lake are renowned also for the complete victory, gained by the gallant McDonough over the British fleet, on the 11th of September, 1814.

Lake Champlain was discovered in 1604. The Indians called it Caniaderi-Guarunte, signifying the mouth or door of the country. It is well stored with salmon, salmon-trout, sturgeon, pickerel, and other fish. A live seal was taken on the ice opposite Burlington, in February, 1810, which was four feet and five inches long. The ice freezes to a great thickness, and is usually passable from the first of December to the fifteenth or twentieth of March, and rarely disappears until the fifteenth of April. Nor is it uncommon, then, for miles of it to disappear in a few hours, much to the admiration of the inhabitants. This, however, does not take place till it has become very full of small holes, through which the air has escaped, and none but the most compact of the ice remaining, its specific gravity is of course greater than that of the water in which it sinks. Before the northern canal was opened to the Hudson, only about twenty vessels sailed on this lake. At the present time, sloops of from thirty to ninety tuns, with now and then a steamboat, may be seen in various directions; while great numbers of schooners, and, within a few years, countless canal-boats, some of them fitted with masts for sailing, also navigate the waters.

Formerly, the towns in the vicinity of the lake were poorly supplied with merchandise. The opening of the canal and establishment of steamboats have produced a wonderful change in this, as well as in other respects. Some of the towns have more than doubled in wealth, population, and business, since 1822, and numerous villages have sprung up into activity and thrift, from almost nothing; while goods are to be had in abundance and cheap.

The region between the lake and the north-eastern branch of the Hudson, which heads six miles west of it, contains vast beds of iron ore,

for which various forges and furnaces have been erecting.

New roads have likewise been made into the interior, and mills built on the tributary streams, for cutting up the supplies of lumber in the forests. In the two townships of Crown Point and Moriah, there are not less than seventy mills, which are able to furnish millions of pieces of timber. This abundant and important article is often floated along the lake in an immense raft, with a small hut constructed toward one end for the men, and rigged like the one represented in our engraving at the head of this article.

THE BAPTISM OF POCAHONTAS.

It will be remembered by many of our readers, that, during the session of 1836–'37, Congress appropriated a sum of money to be expended in adorning the rotundo of the Capitol at Washington with four additional paintings, illustrative of events in the history of this country. The commission for executing these pictures was severally given to J. G. Chapman, H. Inman, R. W. Weir, and J. Vanderlyn. Mr. Chapman has completed his considerably in advance of the others. It is entitled, "The Baptism of Pocahontas." A more beautiful subject, viewed in all the historical and religious relations which it bears to our young republic, could not have been chosen. Mr. Chapman made diligent search and collected ample materials in this country and England for his picture, and all who have seen it award to the artist the highest praise for the design and execution.

Acquainted as we are with the excellence of Mr. Chapman as an artist and scholar, we were confident that his effort would be of the highest character, and honorable alike to himself and the country.

We have before us a descriptive pamphlet, containing an engraved key to the picture, by which we learn its general arrangement. We quote from the pamphlet:—

It was a memorable Sabbath morning when the sound of the church bells echoed through the silent forests about Jamestown, to gather to its consecrated aisles—the first dedicated to the worship of the living God in British America—the pioneers of civilization and Christianity in the new world, to witness the sublime spectacle of this converted heathen girl—POCAHONTAS—THE DAUGHTER OF POWHATAN—"THE FIRST CHRISTIAN EVER OF HER NATION," turning from her idols to God.

How long and earnestly the "winning of this one soul" had been looked to in the colony, and by its friends and promoters in England, the numerous letters and chronicles of that day express in terms that cannot be mistaken for transient impulse. They placed their hopes of lasting prosperity in bringing the savage within the influence of the light of the Gospel; and when that pure-minded girl knelt, the "first fruits of Virginian conversion," at the altar of God, they indulged in pious exultation at the glorious beginning, and the prospect of peace, security, and prosperity, that seemed to dawn upon the colony.

In obedience to the regulation of the town, the captain of the watch had gone his usual round, to "shut the ports and place centinells, and the bell having tolled the last time, had searched all the houses of the towne, to command every one, of what quality soever, (the sicke and hurt excepted,) to repaire to church, after which he accompanied all the guards with their armes (himselfe being last) into the church, and laid the keys before the Governour." The sargeants took their stations, and the Indians gathered about the place of ceremony, as Rolfe supported his destined bride to the rude baptismal font, hewn from an oak of her native forest. *Nantequaus*, her favorite brother, whom Smith calls "the most manliest, comeliest, boldest spirit he euer saw in a Saluage," stood nearest to her of her own kindred; an elder sister, with her Indian boy, sat in mute, anxious interest and curiosity in front, while her uncle, the sullen, cunning, yet daring *Opechankanough*, shrunk back, and probably even then brooded over the deep-laid plan of massacre which he so fearfully executed years after, when that spotless Indian girl had gone to reap her reward in heaven.

The Book of Prayer is closed; for not until after that time was there an established form for the baptism of those of riper years in the service of the Church of England. She bears upon her forehead the record of her vow—she renounces the idols of her nation—has confessed the faith of Christ, and is baptized. The Indian child clings closer to his mother, as the snowy mantle of swan-skin, tipped with a gay plumage that may be still seen among the thickets and along the shores about Jamestown, falling from her shoulders, discovers to her own the costume of her adopted people, and an unguarded movement of momentary excitement among the savage spectators is repeated through the congregation, as hands fall instinctively on match-lock and sword-hilt. It is the moment of the picture—another, and she is received into the fold of Christ, as pure and beautiful a spirit as ever knelt at his Holy Sacrament.

The following letter of Sir Thomas Dale contains so much directly connected with the CONVERSION AND BAPTISM OF POCAHONTAS, and throws so strong a light upon the character of that "*Religious and Valiant Gouernour*," that it is thought worthy of being copied almost entire, as it may be found in the fifth part of "*Purchas his Pilgrimes*," page 1768.

To the R. and my most esteemed friend M. D. M. at his house at F. Ch. in LONDON.

RIGHT Reverend Sir, by Sir *Thomas Gates* I wrote vnto you, of such occasions as then presented themselves, and now againe by this worthy Gentleman Captaine *Argall* I salute you:

for such is the reuerend regard I haue of you, as I cannot omit any occasion to expresse the sincere affection I beare you. You haue euer giuen mee encouragements to perseuere in this Religeous *Warfare*, vntil your last Letters; not for that you are now lesse well affected thereunto; but because you see the *Action* to be in danger of their nonperformances who vndertooke the bussinesse, I haue vndertaken, and have so faithfully, and with all my might indeauoured the prosecution with all alacratie, as God that knoweth the heart can beare me record, what recompence, or what rewards, by whom, or when I know not where to expect; but from him in whose *Vineward* I labour, whose *Church* with greedy appetite I desire to erect. My glorious Master (*Prince Henry*) is gone that would haue ennamelled with his fauours the labours I vndertake, for *God's cause* and his *immortall* honour. Hee was the Great *Captaine* of our *Israel*, the hope to have builded vp this heauenly new *Ierusalem*, he interred (I thinke) the whole frame of this businesse, fell into his graue: for most men's forward (at least seeming so) desires are quenched, and *Virginia* stands in desperate hazard. You there doe your duties, I will no way omit mine, the time I promised to labour, is expired: it is not a yoke of Oxen hath drawne mee from this feast; it is not the marriage of a wife makes me haste home, though that Sallat giue me an appetite to cause me returne. But I haue more care of the *Stock*, then to set vpon a Dye, and rather put myselfe to the curtesie of noble and worthy censures, then ruine this Worke; and haue a Iury (nay a million) of foule mouthed detractors, scan vpon my endeauours, the ends whereof they cannot diue into. You shall briefly vnderstand what hath betide since my last, and how we now stand, and are likely to grow to perfection, if we be not altogether neglected, my stay grounded vpon such reasons, as had I now returned would haue hazarded the ruine of all.

Sir *Thomas Gates* hauing imbarked himselfe for *England* I put myselfe into Captaine *Argall's* ship with a hundred and fiftie men in my frigot, and other boats went vnto *Pamaunkie* River, where *Powhatan* hath his residence, and can in two or three dayes draw a thousand men together; with me I carried his Daughter, who had beene long prisoner with vs; it was a day or two before wee heard of them: At length they demanded why wee came; I gaue for answere, that I came to bring him his daughter, conditionally he would (as hath beene agreed vpon for her ransome) render all the Armes, Tooles, Swords, and men that had run away, and giue me a ship full of Corne, for the wrong he had done vnto vs; if they would doe this wee would be friends, if not burne all. They demanded time to send to their king; I assented, I taking, they receiving two pledges, to carry my message to *Powhatan*.* All night my two men lay not farre from the water side, about noone the next day they told them the great *king* was three daye's iourney off, that *Opochankano* was hard by, to whom they would have had them deliuer their message, saying, That what he agreed vpon and did, the great king would confirme. This *Opochankano* is brother to *Powhatan*, and is his and their chiefe *Captaine*; and one that can as soone (if not sooner) as *Powhatan* command the men.* But my men refused to doe my message vnto any saue *Powhatan*, so they were brought backe, and I sent theirs to them; they told me that they would fetch *Simons* to me, who had thrice plaid the runnagate, whose lyes and villany much hindered our trade for Corne: But they delayed vs, so as we went ashoare they shot at vs, we were not behind hand with them, killed some, hurt others, marched into the Land, burnt their houses, tooke their Corne, and quartered all night ashoare.

The next day we went farther vp the Riuer, they dogged vs and called to know whither we went; wee answered, To burn all, if they would not doe as we demanded, and had beene agreed vpon. They would, they said, bring all the next day, so we forbeare all hostilitie, went ashoare, their men in good numbers coming amongst vs, but we were very cautious, and stood to our Armes. The King's daughter went ashoare, but would not talke to any of them, scarce to them of the best sort, and to them onely, that if her father had loued her, he would not value her lesse then old Swords, Peeces, or Axes: wherefore shee would still dwell with the *English* men, who loued her. At last came one from *Powhatan*, who told vs, that *Simons* was run away to *Nonsowhaicond*, which was a truth as afterwards appeared, but that the other *English* man was dead, that proued a lie (for since M. *Hamor*, whom I employed to *Powhatan* brought him to mee) our Peeces, Swords, and Tooles, within fifteene dayes, should be sent to *Iames* Towne, with some Corne, and that his daughter should be my child, and euer dwell with mee, desiring to be ever friends, and named such of his people and neighbour kings as hee desired to be included, and have the benefit of the peace, promising if any of our men came to him, without leaue from mee, he would send them backe: and, that if any of his men stale from vs, or killed our cattell, hee would send them to us to bee punished as wee thought fit. With these conditions we returned, and within the time limited, part of our Armes were sent, and twentie men with Corne, and promised more which he hath also sent. *Opochankano* desired that I might call him friend, and that he might call me so, saying Hee was a greate *Captaine*, and did always fight: that I was also a greate *Captaine* and that therefore he loued mee; and that my friends should be his friends. So the bargaine was made and every eight or ten dayes, I have messages and presents from him, with many appearances that he much desireth to continue friendship.

Now you may judge, Sir, if the God of Battailes had not a helping hand in this, that hauing our *Swords* drawne, killing their men, burning their houses, and taking their corne; yet they

* The two hostages on the part of the Indians were the brothers of Pocahontas—one of the messengers to Powhatan was John Rolfe, her future husband.—*Smith.*

† Opochankano (sometimes written Opechankonough) headed the Indians in the massacre of the English planters on the 22d of March, 1622, in which nearly three hundred and fifty perished.

tendered vs peace, and striue with all alacritie to keep vs in good opinion of them; by which many benefits arise vnto vs. First, part of our Armes, disgracefully lost long agoe (kept by the *Sauages* as *Monuments* and *Trophies* of our shames) redelivered, some repaire to our Honor. Our cattell to increase without danger of destroying, our men at libertie to hunt freely for Venison, to fish, or doe any thing else, or goe any whither, without danger; to follow the husbanding of our corne securely, whereof we haue about fiue hundred acres set, and God be praised, in more forwardnesse then any of the *Indians*, that I have seen or heard of this yeeres. Roots and Hearbs we haue abundance; all doubt of want is by God's blessing quite vanished, and much plentie expected. And which is not the least materiall, wee may by their peace come to discouer the Countrey better, both by our owne trauells, and by the relation of the Sauages, as we grow in familiaritie with them.

Powhatan's daughter I caused to be carefully instructed in the Christian Religion, who, after she had made some good progresse therein, renounced publickly her Countrey Idolatry, openly confessed her Christian Faith, was, as shee desired, baptized, and is since married to an English Gentleman of good vnderstanding (as by his letter vnto me, containing the reasons of his marriage of her, you may perceiue)—another knot to binde this peace the stronger. Her father and friends gaue approbation to it, and her vncle gaue her to him in the Church; She liues ciuilly and louingly with him, and I trust will increase in goodnesse, as the knowledge of God increaseth in her. She will goe into *England* with mee; and were it but the gaining of this one soule, I will think my time, toile, and present stay, well spent.

THE DRAMA.

In a late number of the Magazine, we gave a brief and desultory sketch of the origin and progress of the ancient Greek drama. We purpose now to depict the rise and improvement of the English drama (from which our own is chiefly moulded), in space as brief, and manner as desultory. The drama is a subject which at this time occupies a large space in the republic of letters; and the attention of the wisest and best men is drawn to it, either for the purpose of improving its morals, or totally abolishing it. There are many men, eminent for religion and virtue, who agree in opinion concerning the *legitimate drama*, with some of the early Christian writers,* as well as pious men of all ages, that the art of stage-playing is not in itself unlawful, nor is it forbidden to live thereby, seeing that it tends to human recreation, which is essential to the enjoyment of life. There are others (and they are numerous), who only see the dark side of the picture, and make wholesale condemnation of the drama, without regard to its good social effects, merely because it has wretched moral blemishes connected with its character. Of the immoral tendency of the stage at the present in this country as well as Europe, there can be but one opinion; but because this species of intellectual diversion has become corrupt, we believe it to be unwise policy to annihilate the drama, without offering a fair substitute. "Preserve and regulate, but not destroy," should be the motto of reformers when they take hold of a corrupt subject, having many inherent good qualities. But we are digressing. We sat down to pen a brief history of the English stage, not a homily upon its morality.

As the early English dramas were derived from the ancient Greeks, we will briefly note the transit of this species of diversion from Greece to Britain. The ancient Greek drama, with its lumbering choruses, flourished at Constantinople as late as the fourth century of the Christian era. About the commencement of that century, Nazianzen, patriarch of Constantinople, banished the plays of Euripides and Sophocles from the stage, and substituted scripture histories. These histories were the earliest dramatic entertainments in all parts of Europe. The ancient choruses were turned into Christian hymns, and the *dramatis personæ* were all of appropriate character. The oldest of these plays extant, was written by Gregory, called *Christ's Passion;* the prologue to which states that the Virgin Mary was then for the first time brought upon the stage. The commercial intercourse between Venice and Constantinople was the medium through which these plays were introduced into Italy, in which country the first European theatre is supposed to have been erected. In 1243, a spiritual comedy was performed at Padua; and in 1264, a fraternity was established there, whose business it was to represent the sufferings of Christ, during Passion Week. But more than a century prior to this date, a play called *St. Catharine*, was written by

* St. Thomas Aquinas says: "Sport is necessary to the usual intercourse of human life; and whatever things are so necessary, have their lawful uses, and therefore, the occupation of stage-players, intended for the solacement of mankind, is not in itself unlawful, nor are the actors in a state of sin, provided that they use their sport with moderation; that is, not using any unlawful words or actions in their diversion and not producing their sport in unlawful times and circumstances. Hence it follows, that those who support them do not commit sin, but act honestly in paying them the reward of their services. And, although St. Augustus hath said, in his commentary on St. John, that it is a great sin to give one's effects to stage-players, yet I understood it to be said exclusively of those who bestow their bounty on such actors as use unlawful expressions and actions in exercising their art, or of such as wantonly waste their substance on such expenditures; but not to be spoken of moderate rewards given to actors, who exercise their art with propriety." We opine that if such only as are here excepted, were patronised at the present, our theatres would present "a beggarly account of empty boxes."

Geoffrey, a Norman, who had witnessed dramatic representations in Italy, and performed at Demstaple Abbey. In 1174, such representations were public in London, and, as they exhibited some of the mysteries or events of scripture history, they were termed MYSTERIES. It is supposed that the first public introduction of these amusements into England was made by the pilgrims who went to the Holy Land, and witnessed them in Constantinople. These plays were encouraged by the clergy, who caused them to be performed by monks in the principal cathedrals and churches during religious festivals, with all the stately attraction of choral chanting, playing upon organs, and ecclesiastical dresses and ornaments. These plays were frequently regulated according to the time occupied by the festival; and sometimes several days were consumed in the performance of a single play, which was divided into acts, and one act only performed each day.

A series of plays, known as the *Chester mysteries*, were annually performed at Chester and Coventry, during Whitsun-week, as early as 1269, and drew together a great number of the "faire and noble of the realme." They were twenty-four in number, and commenced with the *Falling of Lucifer* and the *Creation of the World*, and ended with *Doomsday*. Chester and Coventry were the most celebrated for these sacred plays, and the actors were generally a medley of monks, and the trading guilds of these cities. At Chester, the tanners represented the *Fall of Lucifer*, the drapers the *Creation*, the dyers the *Deluge*, &c.; and at Coventry, the shearmen played the *Nativity*, and the cappers the *Resurrection and descent into Hell*. The parish-clerks of London also performed plays. It is recorded that in 1390, they played at Clerkenwell before Richard II., his queen, and several of the nobility; and in 1409, they presented one of the Chester mysteries, the performance of which occupied eight consecutive days. These mysteries were written in long stanzas of alternate rhyme, having the actors' names and the stage directions, in Latin prose. Notwithstanding the serious character of these plays, they were profusely interlarded with coarse and absurd jests. The stages for their performance consisted of large high-framed carriages, mounted on six wheels, and formed like houses with two stories. In the lower story, the performers dressed, and acted upon the upper. A decorative painting, representing some of the principal scenes in the play, was erected upon the stage. The actors had their faces painted, so as to represent the characters in which they appeared. The stage was drawn from one street to another; and, as the play seldom lasted more than an hour and a half at a time, it was acted in different parts of the town several times during the day. They generally commenced acting at six in the morning, and usually played in nine different places during the day.

About the middle of the fifteenth century, a new species of plays succeeded the sacred drama, and were denominated MORALITIES. In these plays, profane subjects were represented, but they were in reality far less profane and vulgar than the MYSTERIES. It was about the year 1461, that a play, representing other than a sacred subject, was first acted in England; and we find among the statutes passed by Henry VIII., one dated 1542–'43, "to purify the kingdom of all religious plays, ballads, and songs." During the reign of the Catholic Mary, the performance of mysteries was slightly revived, but about 1600, they wholly ceased. The last mystery supposed to have been performed in England, was the *Passion of Christ*, in the reign of James I. Moralities continued to be exhibited throughout the whole of his reign, but toward the close they began to lose their attraction.

The first regular English comedy was produced in 1552, written by John Sill, and called *Gammer Gurton's Needle*, which abounds with humorous dialogue. The first regular tragedy—an English historical tale in verse, divided into acts—was written in 1561, by three English gentlemen, and entitled *Ferrex and Porrex;* and was exhibited before Queen Elizabeth, by the students of the Inner Temple. Neither of these dramas was acted at a public theatre, but chiefly in the Universities or the halls of the nobility. From this time, the public taste was more suited for historical plays than any other, and romance furnished many attractive subjects for the dramatist. Several eminent authors, toward the close of the sixteenth century, produced excellent plays, illustrative of events recorded in the English chronicles, which greatly improved the stage. About 1591, Shakspeare, "the great luminary of the dramatic world, blazed out upon England," in quick succession produced that inimitable series of plays, which, for two centuries and a half have found few equals, and founded the English drama upon that basis on which it at present rests. At that time, actors performed upon scaffolds in inn-yards, and in temporary theatres; but between 1580 and 1630, seventeen theatres were erected in England. Those in London were generally open only in winter, and the performances were by candle-light. The audience was usually of a high character, and at extra high prices seats were procured upon the stage. About 1596, the famous Globe theatre was erected, in which the performances took place in the summer and by daylight, commencing generally about two o'clock, P. M., and lasted two hours. Drury Lane theatre was built in 1663, burnt in 1672, and last rebuilt, in 1809. Covent Garden was built in 1733, and last rebuilt in 1809.

The interior of the early theatres were hung with tapestry, and lighted by cressets, lanthorns, and waxlights; and it was not till Garrick's return from France in 1765, that the present invisible side-lamps were used. All stage-machinery was unknown; and an upper stage or gallery was erected over the main one, for the use of persons representing characters, such as the court in *Hamlet*, or the citizens of Angiers above the gate in *King John*. There were no painted screens previous to 1605, at which time, Inigo Jones, the great architect, exhibited them in three plays before James I. Female parts were played by boys, previous to 1660, when, on the eighth of December in that year, a woman said to have been named Saunderson, performed the part of *Desdemona* at a small theatre in London.

About 1580, the profession of actor became common, and from that time, till about 1640, the players enjoyed many immunities. In 1647, when the puritanic spirit ran high in England and the affairs of royalty were rapidly approaching a crisis, parliament passed an ordinance declaring the actors rogues and vagrants, liable to the ordinary penalties; the theatres were ordered to be destroyed, and a fine of five shillings was imposed upon every person convicted of being present at a play. Many of the performers took up arms for the king, and some secretly played, whenever a number of the friends of the drama could be privately collected together. But frequent arrests and imprisonments took place, and as they were stripped by the soldiers at pleasure, they frequently were reduced to such straits as to be obliged to perform in suits of painted cloth. On the restoration of royalty in the person of Charles II., the drama was revived, but it partook of the immoral spirit of his court. With the improvement of literary taste, and the radical reform which England experienced during the last century, the English stage became considerably purified; but, like our own, it is far, very far, from that state of high-toned morality to which it may be brought, and which its true friends long to see.

The most brilliant era of the past history of the English stage, was about the time of Shakspeare, when the genial influence of the reformation was operating powerfully upon the social condition of the people of England. After the restoration it presents, like the public morals of the time, a dark picture. When the monarch returned from France, he brought with him a taste for scenes and manners with which he and his fellow-exiles had long been conversant; and as the court gave tone to public sentiment, the influx of foreign extravagance and looseness of moral principles through the medium of courtly example, affected the whole people, and the stage of course was guided in its morals by the popular taste. Compared with what it was at that time, the drama is now comparatively pure; but compared now with what it should be, and what it is capable of being made—a powerful prompter of moral and intellectual advancement—we cannot but consider it, with its vile appendages, as a moral plague-spot upon the fair face of our social system.

[Original.]

EARLY MEMORIES.

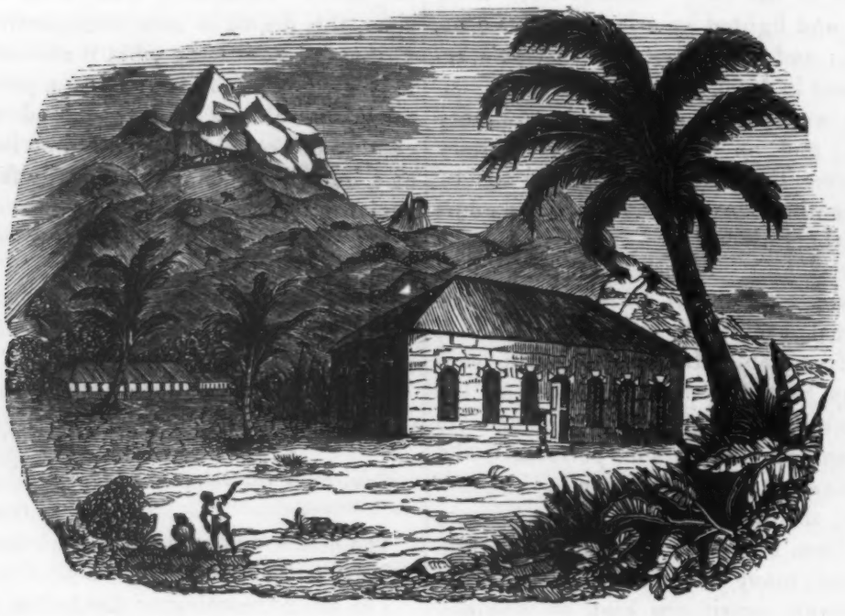
Send back the voices of my home.
Give back
The hollow tones, that from yon rifted rocks
Spake forth, at winter's bidding. Give again
The solemn teachings of that broken stream,
Which, like a spirit, chastened for its guilt,
Tossed on the scourging rocks. And the deep sigh
Of those old, broad-leaved poplars, turning out
Their silver linings to the coming storm,
Whose far-off threatnings, with prophetic ear
They caught, ere its dark banner swept the sky.
Restore the odors of my wild-wood walk,
The sweet arbutus, like a vestal, hid
'Neath its broad veil, the clover newly shorn,
The strawberry, yielding 'neath the crushing foot
Its fragrant life-blood, the delicious breath
Of the young vine-flower, when its leaves, at morn,
Wore at each point a pearl-drop, the fair rose
That sprang uncultured, from the thicket's breast,
The fresh balm, where the people of the hive
Delighted roamed.

Give back the careless thought
With which I sat communing, hour by hour,
With all that moved around me, making friends
Of the arch squirrel, the gay grasshopper,
The sober beetle, or the new-fledged bird
Venturing precocious from the guarding nest,
And vainly fluttering 'mid the tangled grass.
Oh! time. Thou canst not.

'T is not thine to bring
The crystal waters of our childhood back
Into life's thickened vase.

But there 's a joy
To every season. Not the spring alone,
Or the bright summer, hath a gift from God;
But the chill autumn of our weary years,
That kindling of the leaf, before it fades,
And even the fireside nook of frost-crowned age,
Have song and beauty for the trusting heart
Whose every step doth draw it nearer heaven.

L. H. S.



Schoolhouse at Rarotonga.

RAROTONGA.

This is a large and populous island of the South Pacific, lying southwest of the Society isles, and belonging to the group called the Hervey or Cook's islands. It is in 19 S. lat., and 159 W. long., and contains nearly six thousand inhabitants. "The island of Rarotonga," says the Missionary Gazetteer, of 1832, "is politically divided into nearly three equal portions, and governed by three principal chiefs. The new schoolhouse at Guatangiia is ninety feet by thirty-five. Every morning at sunrise it is filled with adults, who, though unable to read, are taught to commit to memory catechisms and passages of Scripture. Many of them can repeat the whole of the first epistle of John. After the adults have left, the house is filled by the children. Twelve of the elder boys can read and write; others are making progress. Those who are able to read and write are placed as monitors over distinct classes.

"The chiefs and people are kind toward the missionaries, and have erected for them a comfortable dwelling, which is floored and plastered. The natives are generally improving. They erect more comfortable houses for themselves, improve in the cultivation of their lands, and enjoy great tranquillity. Fishing-nets, mats, and bananas, are the only valuable property in the island. Their cocoanut-trees have been nearly all destroyed in former wars, and arrow-root is comparatively a scarce plant, but the people are endeavoring by various means to increase their resources."

KEFLA ABAY, OR "SERVANT OF THE RIVER."

The following sketch of the brief sojourn of Bruce the traveller, at the fountains of Geesh, near the source of the Nile, is copied from the "Life of Bruce," recently published by the Harpers:—

When Bruce first reached the fountains of Geesh, the miserable Agows eagerly assembled around Woldo, to inquire how long the party was to remain among them. Fasil's horse was quite sufficient to explain whence the strangers had arrived; and it was consequently expected that they were to be maintained as long as they might think proper to stop. Woldo, however, soon dissipated all their fears. He told them of the king's grant of the village of Geesh to Bruce; and added, that he was come to live happily among them, to pay them for everything, and, moreover, that no military service would be required from them, either by the king or the governor of Damot. This joyful intelligence was quickly circulated among these simple people; and, when Bruce returned from the fountain, he met with a very hearty welcome at the village.

The shum, the priest of the river, gave up his own house to our traveller, and his attendants were lodged in four or five others. "Our hearts," says Bruce, "were now perfectly at ease, and we passed a very merry evening. Strates, above all, endeavored, with many a bumper of the good hydromel of Bure, to subdue the evil spirit which he had swallowed in the enchanted water."

Woldo was also perfectly happy. Out of sight of everything belonging to Fasil except his horse, he displayed Bruce's articles for barter to the shum, to whom he explained that oxen and sheep would be paid for in gold. The poor shum, overpowered at the sight of so much wealth and generosity, told Woldo that he must insist that Bruce and his attendants should take his daughters as their housekeepers. "The proposal was," says Bruce, "a most reasonable one, and readily accepted. He accordingly sent for three in an instant, and we delivered them their charge. The eldest, called Irepone, took it upon her readily; she was about sixteen years of age, of a stature above the middle size, but she was remarkably genteel, and, color apart, her features would have made her a beauty in any country in Europe; she

was, besides, very sprightly; we understood not one word of her language, though she comprehended very easily the signs that we made."

Kefla Abay, or "Servant of the River."

The next day a white cow was killed, and every one was invited to partake of her. The shum should have been of the party, but he declined sitting or eating with the strangers, though his sons were not so scrupulous. He accordingly was left to pray to the Spirit of the River, which these poor, deluded people call "The Everlasting God, Light of the World, Eye of the World, God of Peace, Savior, and Father of the Universe!"

Bruce asked the old shum if ever he had seen the Spirit; he answered, without hesitation, "Yes, very frequently!"

The shum, whose title was Kefla Abay, or "Servant of the River," was a man of about seventy. The honorable charge which he possessed had been in his family, he conceived, from the beginning of the world; and, as he was the father of eighty-four children, it would appear that his race was likely to flow as long as the Nile itself. He had a long white beard; and round his body was wrapped a skin, which was fastened by a broad belt. Over this he wore a cloak, the hood of which covered his head; his legs were bare, but he wore sandals, which he threw off as soon as he approached the bog from which the Nile rises; a mark of respect which Bruce and his attendants were also required to show.

The Agows, in whose country the Nile or Blue river rises, are, in point of number, one of the most considerable nations in Abyssinia, although they have been much weakened by their battles with the Galla tribes. They supply Gondar with cattle, honey, wheat, hides, wax, butter, &c. To prevent their butter from melting on the road, they mix with it the yellow root of an herb called mot-moco. This country, although within ten degrees of the line, is, from its elevation, healthy and temperate; the sun is, of course, scorching, but the shade is cool and agreeable. The Agows are said not to be long livers, but their precise age it is very difficult to ascertain. "We saw," says Bruce, "a number of women, wrinkled and sunburnt, so as scarce to appear human, wandering about under a burning sun, with one and sometimes two children upon their back, gathering the seeds of bent grass to make a kind of bread."

By the 9th of November, Bruce had finished all his observations relating to these remarkable places; he traced again, on foot, the whole course of the Nile from its source to the plain of Goutto.

"Our business," says he, "being now done, nothing remained but to depart. We had passed our time in perfect harmony; the address of Woldo, and the great attachment of our friend Irepone, had kept our house in a cheerful abundance. We had lived, it is true, too magnificently for philosophers, but neither idly nor riotously; and, I believe, never will any sovereign of Geesh be again so popular, or reign over his subjects with greater mildness. I had practised medicine gratis, and killed, for three days successively, a cow each day for the poor and the neighbors. I had clothed the high-priest of the Nile from head to foot, as also his two sons; and had decorated two of his daughters with beads of all the colors of the rainbow, adding every other little present they seemed fond of, or that we thought would be agreeable. As for our amiable Irepone, we had reserved for her the choicest of our presents, the most valuable of every article we had with us, and a large proportion of every one of them; we gave her, besides, some gold: but she, more generous and noble in her sentiments than we, seemed to pay little attention to these, which announced to her the separation from her friends; she tore her fine hair, which she had every day before braided in a newer and more graceful manner; she threw herself upon the ground in the house, and refused to see us mount on horseback or take our leave, and came not to the door till we were already set out; then followed us with her good wishes and her eyes as far as she could see or be heard.

"I took my leave of Kefla Abay, the venerable priest of the most famous river in the world, who recommended me, with great earnestness, to the care of his god, which, as Strates humorously enough observed, meant nothing else than that he hoped the devil would take him. All the young men in the village, with lances and shields, attended us to Saint Michael Sacala, that is, to the borders of their country and end of my little sovereignty."

"These two lines that look so solemn,
Were just put here to fill the column."

THE OLD APPLE-TREE.—By Ann S. Stephens.

I am thinking of the homestead,
With its low and sloping roof,
And the maple-boughs that shadowed it,
With a green and leafy woof;
I am thinking of the lilac-trees,
That shook their purple plumes,
And, when the sash was open,
Shed fragrance through our rooms.

I am thinking of the rivulet,
With its cool and silvery flow,
Of the old gray rock that shadowed it,
And the pepermint in blow.
I am not sad or sorrowful,
But memories will come,
So leave me to my solitude,
And let me think of home.

There was not around my birthplace
A thicket or a flower,
But childish game or friendly face
Has given it a power,
To haunt me in my after-life
And be with me again,
A sweet and pleasant memory,
Of mingled joy and pain.

But the old and knotted apple-tree
That stood beneath the hill,
My heart can never turn to it,
But with a pleasant thrill.
Oh! what a dreamy life I led,
Beneath its old green shade,
Where the daisies and the buttercups
A pleasant carpet made.

'T was a rough old tree, in spring-time,
When, with a blustering sound,
The wind came hoarsely sweeping
Along the frosty ground.
But when there rose a rivalry,
'Tween clouds and pleasant weather,
Till the sunshine and the rain-drops
Came laughing down together—

That patriarch old apple-tree
Enjoyed the lovely strife,
The sap sprang lightly through its veins,
And circled into life;
A cloud of pale and tender buds
Burst o'er each rugged bough,
And, amid the starting verdure,
The robins made their vow.

That tree was very beautiful
When all the leaves were green,
And rosy buds lay opening
Amid their tender sheen;
When the bright translucent dew-drops
Shed blossoms as they fell,
And melted in their fragrance,
Like music in a shell.

It was greenest in the summer-time,
When cheerful sunlight wove,
Amid its thrifly leafiness,
A warm and glowing love;
When swelling fruit blushed ruddily,
To summer's balmy breath,
And the laden boughs drooped heavily,
To the greensward underneath.

'T was brightest in a rainy day,
When all the purple west
Was piled with fleecy storm-clouds,
That never seemed at rest;
When a cool and lulling melody
Fell from the dripping eaves,
And soft, warm drops came pattering
Upon the restless leaves.

But, oh! the scene was glorious,
When clouds were lightly riven,
And there, above my valley-home,
Came out the bow of Heaven;
And, in its fitful brilliancy,
Hung quivering on high,
Like a jeweled arch of Paradise,
Reflected through the sky.

I am thinking of the footpath,
My constant visits made,
Between the dear old homestead
And that leafy apple shade;
Where the flow of distant waters
Came with a trickling sound,
Like the revels of a fairy band
Beneath the fragrant ground.

I haunted it at even-tide,
And dreamily would lie,
And watch the crimson twilight,
Come stealing o'er the sky;
'T was sweet to see its dying gold
Wake up the dusky leaves,
To hear the swallows twittering
Beneath the distant caves.

I have listened to the music—
A low, sweet minstrelsey,
Breathed by a lonely night-bird,
That haunted that old tree,
Till my heart has swelled with feelings
For which it had no name,
A yearning love of poesy,
A thirsting after fame.

I have gazed up through the foliage,
With dim and tearful eyes,
And, with a holy reverence,
Dwelt on the changing skies,
Till the burning stars were peopled
With forms of spirit-birth,
And I've almost heard their harp-strings,
Reverberate on earth.

Ladies' Companion.

SONNET.—By R. H. Wilde.

Thou hast thy faults, Virginia, yet I own,
I love thee still, although no son of thine;
For I have climbed thy mountains, not alone—
And made the wonders of thy valley's mine,
Finding from morning's dawn till day's decline
Some marvel yet unmarked—some peak whose throne
Was loftier; girt with mist, and crowned with pine;
Some deep and rugged glen with copse o'ergrown,
The birth of some sweet valley, or the line
Traced by some silver stream that murmured lone;
Or the dark cave where hidden crystals shine
Or the wild arch 'cross the blue sky thrown;
Or else those traits of Nature more divine
That in some favored son of thine hath shone.

FARMERS' DEPARTMENT.

FARMS AND CATTLE OF KENTUCKY.

THE cattle, farms, and grazing of Kentucky are themes of frequent praise. A recent letter from Lexington (the residence of Mr. Clay), draws the following enticing picture:—

If geography and history had not placed the Eden of the primitive world in eastern climes, you would have sworn this must have been its site. Nature has been lavish here of her bounties in soil, vegetation, and climate. For fifty miles around the land is of the richest alluvial earth, from five to ten feet in depth, resting upon a stratum of limestone. Its surface, at a distance, appears like a vast plain, but entering it, the ground is found rolling, like the long swelling undulations of the ocean. The country—every acre of which is as rich as your garden spot—is divided into extensive plantations of five hundred to two thousand acres each, with its farmhouse, and its negro-cabins clustering around it, placed in the centre, remote from the highway, surrounded by a grove, broad avenues lined with trees leading to it.

Col. Clay, of Fayette county, has an estate containing upward of six thousand acres, most of which is devoted to pasturage, and he sold in 1836, I was informed, upward of thirty thousand dollars' worth of cattle upon the hoof, a part of which were driven to the New York and Brighton markets.

Many districts in this rich grazing country present the anomalous condition of a country increasing rapidly in wealth and advancing in improvements, while decreasing in population. The reason of the singular state of affairs, is that the small farmers are selling their circumscribed farms to the wealthy graziers, who are monopolizing the lands in their vicinity. This was peculiarly the course of events in 1836 to 1838, while beef and stock commanded exorbitant prices: the low prices of beef for a year or two past, have, however, arrested the tendency to accumulate the lands in the hands of a few large proprietors.

Corn and rye fields are planted and sown here for the purpose of feeding cattle upon them, standing in the field. Rye is never gathered for domestic use, and it strikes an eastern man as a most wasteful and improvident mode of farming, to turn a herd of cattle into a rich and ripened field of grain to feed upon and trample it under their feet; and when they have feasted and gorged themselves upon it for a few days, the swine are let in to gather up the scattered and mutilated remains of the harvest.

The farmers in the vicinity of Lexington possess now the finest breed of cattle in the world. For many years large sums have been paid, and much care and labor incurred by them, to procure the best specimens of English stock. Agents have annually been sent to England to purchase, without regard to cost, the choicest bulls and cows of the most famous breeds. These being transferred to the luxuriant pastures and genial clime of Kentucky, their offspring improve in all their characteristic points of excellence, and surpass their progenitors in size and beauty. I saw yesterday, heifers three years old, that would weigh fifteen hundred pounds, and which were the most perfect models of beauty; and their calves of this season, now four or five months' old, would weigh down an ordinary cow of full growth, and these lusty fellows were bleating after their dams and tugging away at the teat like young sucklings, for here cows are kept not for milk, but to raise calves, and no butter and cheese are made upon these large stock-farms for the market.

The rearing of horses and mules is also a source of great profit, and the echo is awakened throughout the sylvan pastures by the perpetual bray of the stultified ass, and the neighing of the prancing blood-horse, which, like the beeves, being kept principally for breeding, are seldom subjected to the bit and harness, and in their wild freedom they start at the sound of strange footsteps, snuff the air, and bound off in the unrestrained liberty of the untamed prairie-horse. From twenty to fifty horses are kept upon the large estates, and usually as many mules. A few days since, upon the rich bottoms of the Sciota, near Columbus, I saw upward of three hundred mules grazing in one pasture.

In a country where pork is so important a staple of production, it would be supposed that great care would be given to procure the best breed of swine; but the long-snouted, lank, and slab-sided race, seen running wild in large herds through the woods, exhibit an astonishing indifference in their owners to the improvement of this description of stock. But in the recent screwing times of money, this wild race of pigs have afforded a convenient and timely relief to many a distressed delinquent. By the statutes of this state, the debtor has the privilege of designating what articles of his property shall be sold under execution to satisfy a debt, and of late it has been the practice in the new counties, among those who seek every means to escape from the pressing demands of the sheriff and constable, to point out the herd of wild hogs in the woods. They being worth the amount of the execution, the limb of the law is obliged to accept them, "but the thing is to catch 'em." If not taken, they return to the possession of the debtor. A friend of mine saw the same herd of swine offered as satisfaction for execution five times in one week, and these had been borrowed of a neighbor for a few days, and were of the wildest sort, to evade the process of the law. The executions being returned *nulla bona*, the title of the pigs was transferred to their rightful owner. But a few eastern gentlemen, residents in this state, are now engaged in propagating a tamer race, that will be more amenable to the law.

There is no class of men who enjoy a greater freedom from the cares, anxieties, and labors of life than the planters of this fertile region. They are the princes of the land—free from debt, living in the enjoyment of princely incomes, and upon estates, some of which almost equal a small German principality in territory.

GEOLOGY APPLIED TO AGRICULTURE.

At the Neithsdale Agriculture Society, a few days ago, Dr. Buckland said: The agriculturists of this country were now beginning to understand how capable the study of geology was of being made to bear, immediately and practically, on agricultural improvement. Twelve months ago he had pointed out to the agriculturists of England a method of improving the land by mineral manure, not to supplant bone-dust, or any vegetable manure, but to co-operate with them. In connexion with this subject, and in elucidation of his own views, he would recommend to the meeting a work on Subsoils, by Mr. Morton, steward of the late Lord Ducie, containing the practical results of his experiments on soils, under twenty-five or thirty conditions of kind or quality. He would also recommend Mr. M'Gillivray's work on the Influence of the Geological Structure on the Agricultural Capabilities of the Earth. He confessed he himself had not read the work, but so struck was he with other writings of Mr. M'Gillivray, that he would now put his hand blindfold to anything he might write. Would the meeting pardon him, while for a few moments he should attempt to point out the proper bearing of geological knowledge on agricultural improvement.

The stomach of an animal was a laboratory, by which hay, grass, and corn, were converted into roast beef; but how were animals in their turn, and other substances of the earth to be changed into corn, grass, and hay, that necessary pabulum, without which all the successive generations of animals would be lean and die? Here the geologist and the agriculturist met. The two great points for the improver to secure were, *first*, dry land; and, *secondly*, the necessary compound of the four or five elementary substances which enter into the composition of every good soil. From chymical and mineralogical analysis, it had been found that, in alluvial land, confessedly the most fertile of all, the main component parts were, lime, silex, iron, and magnesia, with some manganese; and therefore, of course, it became the chief feature of all improvements of the land, to secure the proper proportions of these ingredients, so as to produce as nearly as possible a result the same as alluvial soil, in which they were found in most efficient combination. Silex entered into the composition of everything, though it was deficient in the slate countries. There was more of it in oats than in any other grain. The oat-fed Scotchman had, therefore, more flint in his body than the natives of any other country, and hence, no doubt, the great superiority of the Scotch regiments. Manganese was comparatively a rare ingredient, but there was not a man in that room who had not manganese in him. But no matter where, and in what proportion, these substances were found, nature had given us the limestone to make up or correct almost every other ingredient of soil. The learned professor then minutely pointed out the *rationale* of the use of lime. In Lincolnshire, an agriculturist, in improving a peat-bog, had induced every property of soil upon it, but without adding lime. The first season of crop there was plenty of straw and husks upon it, but no corn. He was admonished of the deficiency, added lime, and next year had the finest oats in the country. This was quite parallel with the enterprising experiments of his own friend, Sir Charles Menteath, who had converted a useless peat-bog into a meadow worth four pounds an acre.

Scotch paper.

SCIENTIFIC NOTICES.

DISCOVERIES IN CRYPTOGAMIC VEGETATION.

The following is extracted from a lecture delivered before the Philosophical and Literary Society of Bristol, England:—

The first point brought by Mr. Carpenter under the notice of his auditors, was the vegetable nature of *yest*. He stated that the phenomena of fermentation had long been a source of perplexity to chymists; a change being produced by the action of this substance in the fluid with which it is mixed, while it does not itself enter into any new combination, but, on the other hand, is greatly increased in amount. This mystery is now explained. On looking at *yest* with a good microscope, the mass is found to consist of a number of minute disconnected vesicles, which greatly resemble those of the *red snow* (*Protococcus nivalis*). These, like seeds, retain their vitality for almost any length of time; their power of growing, when placed in proper circumstances, not being destroyed by exposure to such extremes of temperature as 76°, and 212°, or by being dried into a cake. When these are placed in a saccharine solution, they commence vegetating actively, provided the temperature be sufficiently high. If a fluid thus excited to fermentation be examined at short intervals, it is observed that each vesicle puts forth one or more little prolongations, or buds, which in time become new vesicles like their parents; these again perform the same process, so that within a few hours the single vesicles have developed themselves into groups of four, five, or six. By the time that five or six vesicles are found in each group, the fermentation is sufficiently advanced for the purposes of the manufacturer, and he then takes measure to check it. The vegetation of the yest is then suspended; and the groups of vesicles separate into individuals, the mass of which constitutes the yest thus largely increased in amount. The vesicles multiply also by a process analogous to the formation of seed in the higher plants. Some of them are observed to burst, and to emit a number of minute gramules, each of which developed itself into a new cell, as in the case of the red snow. It is well known that various fungi, in process of growth, hasten or even effect the decomposition of the substances on which they vegetate. Thus the common *mould* is well known to de-

stroy the palatibility of sweet preserves; and the *dry-rot* causes the decay of the timber it infests. This tribe of plants, which cannot flourish except upon decomposing organized matter, is an exception to the general rule of the vegetable kingdom, the members of which remove more carbon from the atmosphere than they impart. Like other fungi, the simple but important plant, which constitutes yest, decomposes the organic matter in which it developes itself, and abstracts a portion of the carbon of the sugar, thus converting it into alcohol. It may be expected that the knowledge of the real nature of the process will give the brewer more control over it, when the various causes which accelerate or retard the growth of the vegetable shall have been properly investigated.

Another curious example of cryptogamic vegetation has been lately discovered in an equally unexpected quarter. The disease termed muscardine, which has annually destroyed a large proportion of the broods of silk-worms reared in the south of Europe, has been ascertained to be caused by the growth of a minute vegetable of the fungus tribe within their bodies. When any of the germes have found their way beneath the skin, they vegetate in the fatty mass which covers the body, and gradually cause the death of the animal, by destroying this, and by blocking up the respiratory passages. The plant not only grows from the spot where it has originated, but the new germes which are then produced are carried into distant parts by the current of the circulation. It much resembles, in its first stage, the vegetable of the yest just described; but it subsequently assumes a more complex form. The disease may be communicated by inoculation, that is, by artificial insertion of the germes of the fungus, to either caterpillar, chrysalis, or moth; but only the first is spontaneously attacked by it, and this when it is about to pass into the pupa state. The germes are probably carried in the air from one to another, and introduced throughout the respiratory openings. The importance of this disease has led to careful inquiry into the circumstances which favor the production of the fungus; and it has been shown, that if the bodies of the caterpillars which have died during breeding be thrown together in heaps, and exposed to the influence of a warm and moist atmosphere for a few days (as was very commonly done), this fungus almost certainly appears upon them; and that it is then propagated to the living worms by the diffusion of sporules through the air. Bristol Mirror.

SELF-PURIFICATION OF THE ATMOSPHERE.

It is a character of gases, that, when once mixed, they have no tendency to arrange themselves according to their specific gravities, as liquids do. The law of Prof. Graham expresses the mode in which this mixture is made: Suppose two gases to be brought in contact; then they have a tendency to mix, or *diffuse*, as he expresses it, depending on their specific gravities, or being inversely as the square root of this law. It is this beautiful law which prevents the atmosphere of cities from becoming dangerously unwholesome. The certainty and rapidity of its operation have been well illustrated by Dr. Thomson. Every individual, by breathing, at an average, throws $10\frac{3}{4}$ cubic feet of carbonic acid gas into the air in 24 hours. If the population of Glasgow be 260,000, the quantity of carbonic acid thrown by it into the atmosphere would, in 24 hours, amount to 2,773,333 cubic feet; if we admit the other animals, horses, &c., to amount to 1-10th of 260,000, they would produce about 280,000 cubic feet more; so that the whole carbonic acid produced in Glasgow by breathing in 24 hours is 3,053,333 cubic feet. If we suppose the consumption of coals in Glasgow and the neighborhood to amount daily to 2,000 tuns, this will produce 1,078,510 cubic feet of carbonic acid, so that the whole carbonic acid gas thrown into the atmosphere in Glasgow daily must amount to 4,131,843 cubic feet. Every volume of carbonic acid gas produced renders five volumes of air unfit for respiration; hence in 24 hours, 20,659,215 cubic feet of air are rendered unfit for respiration, or, in fact, perfectly poisonous. Now, a base of four square miles, with a height of 100 feet, contains 11,151,360,000 cubic feet, of which 2,230,272,000 cubic feet are oxygen gas; consequently, in little more than 539 days, the whole oxygen in that space would be converted into carbonic acid gas, and every creature in Glasgow and its environs would be destroyed. Yet, if we examine the atmosphere of Glasgow or its neighborhood, we find it always to contain the usual quantity of oxygen gas, and the proportion of carbonic acid never exceeds 1-1000th of its volume; a proof that both the carbonic acid and azote of the air are dissipated with extreme rapidity. Athenæum.

COMPOSITION OF WOOL.

Chevreul has lately examined wool with a practical view in dying. He has found that wool when washed with distilled water contains at least three immediate principles; 1st, a fatty substance, solid at the ordinary temperature, and perfectly liquid at one hundred and forty degrees; 2d, a fatty substance, liquid at the temperature of fifty-nine degrees; 3d, a filamentous substance, constituting the wool properly so called. He has come to this conclusion because the filamentous matter disengages sulphur or hydro-sulphuric acid without losing its essential and characteristic properties, and hence it appears to him probable that the sulphur enters as an element into the composition of a substance quite distinct from the filamentous body.

THE ALLEGANY RIDGES.

The following is an extract of a letter from a correspondent of the Providence Journal, giving an account of a "tour across the Alleganies, by the national road."

"From Harper's Ferry, Va., I retraced my steps to Fredericktown, and took the stage over to the old and familiar route of the national road.

The road is so well known as to offer few objects of interest which are not familiar to every one. But as you have not personally crossed the Alleganies at this point, I will endeavor to convey to you some notion of the character of the scenery and towns upon the route.

"Frederick is a very inland city, neat, compactly built, mostly of brick, with paved streets and handsome sidewalks, differing from most of the interior towns of the slave states; you see no old dilapidated buildings, falling to decay, on which the tooth of time is permitted to exhibit its slow ravages till the last sill drops into the cellar. It is connected with Baltimore by railroad, contains from seven to eight thousand inhabitants, exhibits an air of prosperity, and affords indications of wealth and taste among its inhabitants. With the charming country around it, Frederick (as it is called by its citizens) must be a most eligible place of residence for a person of leisure and fortune.

"The country from Frederick to the base of the Blue Ridge, a distance of twelve miles, extending north and south as far as the eye can reach, is a beautiful plain, appearing like one vast field checkered with the various kinds of grain and grass. It is one of the richest agricultural districts in the middle states, and the region from which a large portion of the Howard-street flour is derived. When we passed through it, its golden plats of wheat and rye were ready for the sickle, and the harvesters were afield gathering its abundant products. Gangs of laborers were seen in every direction over the vast area, giving life and animation to the scene. I counted twenty-six laborers in one group, making a merry harvest-bee over a fifty-acre wheat-field; their labor seemed turned to sport, and ready hands and joyous hearts were making a short job of the task before them. Ascending the Blue Ridge, and looking back upon this vale of waving fields, you behold one of the most enchanting landscapes which nature can present to the eye.

"Crossing the Blue Ridge, you descend into the Blue Ridge valley, lying between the latter mountain and North mountain. This valley extends from the coal region of Pennsylvania to the borders of South Carolina, gradually widening as you progress south. It includes the best lands of Virginia and North Carolina, and forms the most populous and wealthiest portions of those states. Where it is crossed by the national road in Maryland, it is about sixteen miles in width, and is in the highest state of cultivation, and presents in the whole extent which the eye can embrace from the summit of the mountain, a scene of unparalleled loveliness and splendor. It is dotted with farm-houses, and diversified with the grove, the cornfield, the meadow, and the pasture, over the latter roaming innumerable flocks and herds, which, in the long vista up and down the valley, is reduced to a miniature panorama of rural life, and the cattle appear like insects moving over the scene. In the centre of this delightful vale stands the beautiful village of Hagerstown. It is the market-town of this rich district, and is handsomely and carefully built, containing four thousand inhabitants, with regular paved streets, neat and tasteful in its aspect; and surrounded by this magnificent landscape, which it overlooks, it is one of the most charming inland towns in the union.

"We crossed the valley at a late hour in the afternoon, with this enchanting view spread out before us, lighted by the oblique rays of the declining sun, and as we wound our way along up the weary ascent of North mountain, five miles in length, we watched the gathering shades of evening spreading themselves over the valley beneath, gradually obscuring one object after another, till darkness covered the whole scene below; while the distant mountain top beyond, and the summit on which we rested, glittered in the last rays of the departing sun.

"Taking a farewell look at this lovely prospect, just as nature veiled it from sight with her evening curtain, we were carried, during the night, over three successive ridges, known by names of Negro mountain, Greene ridge, and Sidling hill. These ridges are from two thousand five hundred to three thousand feet high, covered with dense forests, except upon the apex, where the growth is poor and stunted—with narrow and steril valleys between them. The road winds along in a serpentine direction up the sides of the mountain, making the distance from three to five miles in the ascent, presenting on one side the high excavated side of the mountain, and, on the other, the abrupt precipice descending, almost perpendicularly, from one to two hundred feet. Around these fearful precipices the stage runs, within a few feet of the edge, and the bold and reckless driver does not hesitate to approach within as many inches of these unguarded brinks, raising a screech of horror and fright from the female-passenger, who seizes her nearest companion with an embrace of despair, and implores him, in moving and heart-rending strains, to save her from instant destruction. The ascent and descent, on either side, are equally precipitous. You reach the summit by a slow, creeping pace of two miles an hour; when, at last, the summit is attained, you begin immediately to descend at the Jehu-rate of fifteen miles an hour; and once more in the valley, the same tedious process of ascending begins again. After a laborious night's toil, these four *ridges*, as they are denominated, are surmounted, and you arrive in the morning at Cumberland, one hundred and fifty-three miles from Baltimore, situated in a valley at the immediate base of the *Alleganies proper;* what you have already passed being only lateral spurs of the principal chain. Cumberland was, in the old French war, the most distant outpost, and was called Fort Cumberland. It is located in a rich mineral region of iron and coal, upon the north branch of the Potomac, which affords considerable water-power that is but partially improved. It possesses abundant resources for a profitable manufacturing business. It is the point of termination of the Ohio and Chesapeake canal; the town contains about three thousand inhabitants, and although built upon regular streets, the houses are mostly low, and the place wears a coal-stained, dingy aspect.

Here terminates the great M'Adamized turnpike road which forms the continuation of the national road to Baltimore; the former was built by a private corporation, and equals the national structure in beauty and excellence. Immediately back of the town, to the west, the mountain rises perpendicularly to the height of two thousand feet, looking like a long line of walled ramparts, covered with shrubs and ivy, and arresting all advance beyond them. Leaving the town, and pursuing the road along their base, while their craggy tops seem to rise directly over your head, you search with eager eye for some way of egress from their enclosure; suddenly, upon turning an angle in the mountain, a deep, narrow gap, formed, apparently, by rending the mountain asunder to its very foundation, in some convulsion of nature, opens to the view, permitting the current of the north branch of the Potomac, here reduced to a mere brook, to pass through the breach, so nearly upon a level with the valley beyond as scarcely to cause a ripple upon its surface. The gorge was of a width just sufficient to admit the passage of this small stream, and when the national road was first located, it was carried in a long, circuitous course, partly over and around the mountain. Recently, the gap has been enlarged at the expense of much labor, and the road constructed along the borders of the little stream. Under the beetling cliffs and overhanging sides of the mountain, appears to be a solid mass of rock, which has been cleft and riven away, in a perpendicular line, to the height of one thousand five hundred feet; its naked and unmossed sides looking as if it was but the work of yesterday, and the heap of broken fragments at the bottom, and the constantly falling pieces of rock, detached by the action of the atmosphere, seem as if the work of destruction was not completed. It strikes the beholder, as he enters it, as a colossal gateway recently cut by the hand of nature, through this insurmountable mountain, to admit civilized man, with his arts and commerce, to the rich regions of the west beyond. I am surprised that so sublime and magnificent a spectacle of nature's mighty operations, which is here displayed upon one of the greatest thoroughfares of the country, has not been more frequently described. I can account for it only by supposing that it is usually passed by travellers in the night; or, if entered in the daytime, the eyes of travellers are fast locked in sleep by the fatigues of the day and night riding which they endure to reach it. I passed it myself three times before I heard of it or discovered it."

MISCELLANY.

MAKING AUGUR-HOLES WITH A GIMLET.

THERE is a fund of good sense in the following sketch, which we copy from one of our country exchanges, where it appears as a selection, but without credit. It reads very much like the pen-work of a city friend, whose "hole in my pocket," and other kindred teachings, have conveyed lessons of true wisdom, to thousands of persons in all parts of the country, within the past five years. We had the pleasure of having him among our correspondents during last winter; and now that the election excitement is over, we should be pleased to make our columns again the vehicle of his communications to the popular mind. Cincinnati Gaz.

"My boy, what are you doing there with that gimlet?" said I the other morning to a flaxen-haired urchin, who was laboring away with all his might, at a piece of board before him.

"Trying to make an augur-hole!" was his reply, without raising his eyes or suspending operations.

"Precisely the business of at least two thirds of the world, in this blessed year of our Lord, 1840, is this making augur-holes with a gimlet," said I to myself as I walked musingly onward.

Here is young A. who has just escaped from the clerk's desk behind the counter. He sports his mustaches; wears his hair long; has acquired the power of being shaved; carries a ratan; drinks champaign when he can command an X to purchase a bottle, and treat a friend to a dinner; talks largely of the price-current, fall of western stocks and profits of banking; stands in his boots two inches taller than Astor or Appleton; and speaks of foreign exchanges as would Rothschild or Biddle. He thinks he is a great man, when all others know he is only making augur-holes with a gimlet.

Mr. B. is a rapid politician. He has labored hard at caucuses, at ward and town meetings, has talked of the dear people till the words flow parrot-like from his lips; and has done a full share of the dirty work of the party for years. Office has been the lure held out to lead him onward, and which has made him neglect his business, spend his time in hunting up recruits, drilling the refractory, and qualifying himself for bar-room argument and stump oratory. He can settle the affairs of the nation in a trice; diplomacy has no intricacies for him; he has shaken hands with the president, and is a great man. He will soon be used up, and cast aside; and will then see, as others now do, that he is chasing a jack-o'lantern, that he is making augur-holes with a gimlet.

There is Miss C., who is really a very pretty girl, and who might become a woman that a man of sense might be proud of. Now, she apes the ton in all things, reads exciting novels, goes to the opera, admires Celeste's dancing, has nearly ceased to blush at the most indecent nudity, lounges on sofas, glories in her idleness, keeps her bed till noon, coquets with male animals as feminine as herself, imagines that she is a belle, and forgets that her father was a cooper, lisps of high life, and plebeian presumption, and is in a fair way to ruin herself. All this comes of her belief that an augur-hole can be made with a gimlet.

Mr. D., whom I have just passed, may be put down as a distinguished professor of the gimlet. His father left him a fine farm free of incumbrance; but speculation became rife, fortunes

were made in a twinkling, and D. fancied "one thing could be done as well as another." So he sold the farm, and bought wild lands in the prairies, and corner lots in lithographed cities; and began to dream of "golden Ind." Work he ought not; it had suddenly become degrading. Who could think of tilling or being contented with a hundred acres of land, when thousands of acres in the broad west were wanting for occupants or owners. D. was not the man to do it, and he operated to the extent of his means. At last the land-bubble broke; lithographed cities were discovered to be mere bogs; and prairie-farms, though the basis of exhaustless wealth, worthless unless rendered productive by labor. But D.'s beautiful farm is gone; and as he is now preparing on compulsion to become a pioneer in the west, he feels that it is difficult making augur-holes with a gimlet.

Mr. E. is the representative of quite a class. He had his attention awakened to the subject of religion, and obtained new views of its importance and his obligations. Believing, what cannot be disputed, that love to God and good will to man, are the only sources of true happiness, and feeling, as every benevolent mind must, a desire for the welfare of his race, he fancied himself called to declare these truths to the world, and forsaking his anvil, his lapstone, or his plough, became without delay an expounder of the Scriptures, a self-delegated instructer of mankind. He forgot that the age of miracles had ceased; and that the ability to teach must now be acquired by the slow but necessary process of human learning. He begins to have misgivings that he has mistaken his call; and will probably discover, when too late to rectify the error, that he has spent the best half of his life in trying to make augur-holes with a gimlet.

SLEEPING APARTMENTS.

"It must not be forgotten," remarks Hufeland, "that we spend a considerable portion of our lives in the bed-chamber, and consequently that its healthiness cannot fail of having a very important influence upon our physical well-being."

Every one, in fact, who is actuated by a due regard for health and real comfort, will consider an equal degree of attention necessary in regard to the size, situation, temperature, and cleanliness of the room he occupies during the hours of repose, as of his parlor, drawing-room, or any other apartment; and yet how often do we find families crowded at night into obscure and confined chambers, of dimensions scarcely more ample than those of an old-fashioned closet, while, perhaps, in most instances, the best rooms in the house will be set aside for the sole purpose of ostentatious display.

It is all important that the largest and most lofty room, upon the second floor, be appropriated for the sleeping apartment, and that it be freely ventilated during the daytime, at all seasons, when the weather is not rainy or otherwise very humid.

There are few houses, the rooms of which are so situated as to render the latter impracticable, and the influence of the practice upon the health of inmates is too important to permit its being neglected from any slight cause.

A bed-chamber should be divested of all unnecessary furniture, and unless of considerable size, should never contain more than one bed. There cannot be a more pernicious custom than that pursued in many families, of causing the children more especially, to sleep in small apartments, with two or three beds crowded into the same room.

It is scarcely necessary to observe, that cleanliness, in the most extensive signification of the term, is, if possible, even more necessary, in reference to the bed-chamber, than to almost any other apartment.

The practice of sleeping in an apartment which is occupied during the day, is extremely improper. Perfect cleanliness and sufficient free ventilation cannot, under such circumstances, be preserved, especially during cold weather; hence the atmosphere becomes constantly more vitiated and altogether unfit for respiration.

While too great a degree of caution cannot be observed to avoid sleeping in damp rooms, beds, or clothing, the temperature of the bed-chamber should, if possible, never be augmented, under the ordinary circumstances of health, by artificial means. As this apartment is to be reserved solely for repose, a fire is never necessary, excepting, perhaps, during uncommonly severe weather; and even then, the temperature ought not to exceed fifty degrees.

A sleeping apartment, in which a large fire has been kept for several hours previous to the period of retiring to rest, may, to many, at the first view, present an appearance of the most perfect comfort—it is, however, at the same time a means of very effectually enervating the system—creating an increased susceptibility to the influence of the cold, and thus opening the way to the attack of some of the most serious diseases especially of the chest. Happy may they esteem themselves whose means forbid an indulgence in this species of luxury.

A person accustomed to undress in a room without a fire, and to seek repose in a cold bed, will not experience the least inconvenience, even in the severest weather. The natural heat of his body will very speedily render him even more comfortably warm than the individual who sleeps in a heated apartment, and in a bed thus artificially warmed, and who will be extremely liable to a sensation of chilliness as soon as the artificial heat is dissipated. But this is not all—the constitution of the former will be rendered more robust, and far less susceptible to the influence of atmospherical vicissitudes than that of the latter. Journal of Health.

In Michigan there are 109,896 hogs, 62,684 sheep, and 175,000 people. Each human inhabitant can almost "go the whole hog," and make out the balance with mutton. If there is a plenty of hommony and potatoes in that quarter, we should call it a small paradise.

THE EMIGRANT.—WESTWARD HO!

WESTWARD HO!

Look upon our frontispiece, and behold there a picture of the embryo of an infant colony—a flourishing state—a mighty empire! Witness there the portraiture of a seed of civilization and improvement, borne upon the wind of fortune, and destined to fall somewhere amid the rich alluvium of the West, there to germinate, spring up, and bear fruit that shall give nourishment and strength to the state. It is a picture of one, among thousands, who has left the endearments of home, the luxuries of rich agricultural and commercial regions, teeming with population, and with a gun upon his shoulder, and a faithful dog, has led the way into the wildernesses of the west, followed by a single horse and wagon, bearing his family and all his earthly possessions. The rough road, the umbrageous forest, the rushing stream, and the treeless prairie, are no impediments to deter him from his purpose of finding some eligible spot where he may pitch his tent, rear his cabin, sow his seeds, and reap rich harvests, thus forming a nucleus for a thriving community and finally a new state to be added to the confederacy—a new star to our national banner. How many, very many, in humble life, have thus left the Atlantic states where they were scarcely known amid the multitude, pitched their tents upon the virgin soil of the Mississippi valley where the foot of the white man had never before trodden, and in a few years found themselves surrounded with all the comforts of life, called upon to take an active part in the political affairs of the state or territory wherein they had settled, and frequently again sent eastward to sit in the national council. There are many, very many, who "go to the west," with high anticipations of making speedy fortunes, without counting the cost. In their estimate of results they omit the many privations to which they will be exposed, and value too lightly the lessons of experience read to them by predecessors. They forget in their day-dreams of gain, that they are about to exchange a pleasant mansion for a cheerless log-cabin; the privileges of social intercourse and religious association, for almost utter solitude; and a life of comparative ease for the most arduous physical labor. They look upon the bright teints of the picture, and seldom glance at the umber to which the finger of experience would point them. These are they who return from the west sadly disappointed in their hopes and expectations, and are for ever croaking about its unhealthy climate, barren soil, and other equally grievous complaints. But he who goes with the expectation of laboring hard, living prudently, managing wisely, and selects his locality with judgment, may be sure of receiving a bountiful return for his sacrifices.

There are millions of acres of land in our western states and territories, with a garden-like soil, that yet remain untouched by implements of culture, which may be purchased at the government price (one dollar and a quarter per acre), where no greater objections to the climate can be made than against any other sections of the Union; and far better would it be for the individuals and the public, if the *floating* population of our cities and large towns would act wisely and suffer themselves to *drift* westward with what little pecuniary means they may have. Many foreigners will land upon our shores with sufficient ready money to purchase land enough to yield them a comfortable subsistence; but instead of availing themselves of this advantage, they unwisely seek employment in our cities, soon spend their small means, and *vegetate* year after year amid the miseries of hopeless poverty.

The cost of transition from the Atlantic states to the fertile regions of Iowa or Wiskonsin, is now quite trifling for so great a distance, and hence emigrants who come with some money in their pockets, have no excuse for enduring the miseries of obtaining a precarious existence in our cities. To these we would say advisingly, Westward Ho!

FLOWERS.

Oh! they look upward in every place
  Through this beautiful world of ours,
And dear as a smile on an old friend's face
  Is the smile of the bright, bright flowers!
They tell us of wanderings by woods and streams;
  They tell us of lanes and trees;
But the children of showers and sunny beams
  Have lovelier tales than these—
    The bright, bright flowers!

They tell of a season when men were not,
  When earth was by angels trod,
And leaves and flowers in every spot
  Burst forth at the call of God;
When spirits, singing their hymns at even,
  Wandered by wood and glade,
And the Lord looked down from the highest heaven,
  And blessed what he had made—
    The bright, bright flowers!

That blessing remaineth upon them still,
  Though often the storm-cloud lowers,
And frequent tempests may soil and chill
  The gayest of earth's flowers.
When Sin and Death, with their sister Grief,
  Made a home in the hearts of men,
The blessing of God on each tender leaf
  Preserved in their beauty then—
    The bright, bright flowers!

The lily is lovely as when it slept
  On the waters of Eden's lake;
The woodbine breathes sweetly as when it crept
  In Eden from brake to brake.
They were left as the proof of the loveliness
  Of Adam and Eve's first home:
They are here as a type of the joys that bless
  The just in the world to come—
    The bright, bright flowers!

THE THOUSAND ISLANDS.

The following sketch of a large group of islands in the river St. Lawrence, is given by a correspondent of the Cleveland (Ohio) Herald :—

The scenery of the Thousand islands stands unrivalled in America for quiet beauty and picturesque effect. Although it partakes not of the sublimity and granduer of Niagara and the Sault de Ste. Marie, yet there is a charm and romance about it which steal over the senses, and fill the soul with delight; and that man who can resist its silent but powerful influence, must be more than a stoic.

The river along here varies from two to nine miles in width, and is filled with innumerable small rocky islets, generally covered with cedar and hemlock close to the water's edge; yet there are exceptions, as some of them are nine or ten miles long, covered with good timber, and somewhat fertile.

Many of the islands are so close together, that the branches are often interlocked, and there is scarcely room for a small canoe to go between them; and in passing, the eye often catches glimpses of long vistas, fringed with little green islets and terminating in a broad expanse of water, that looks like a tiny lake, which in a moment, as his boat passes on, is lost to his view, or changed to some new scene more exquisite and lovely.

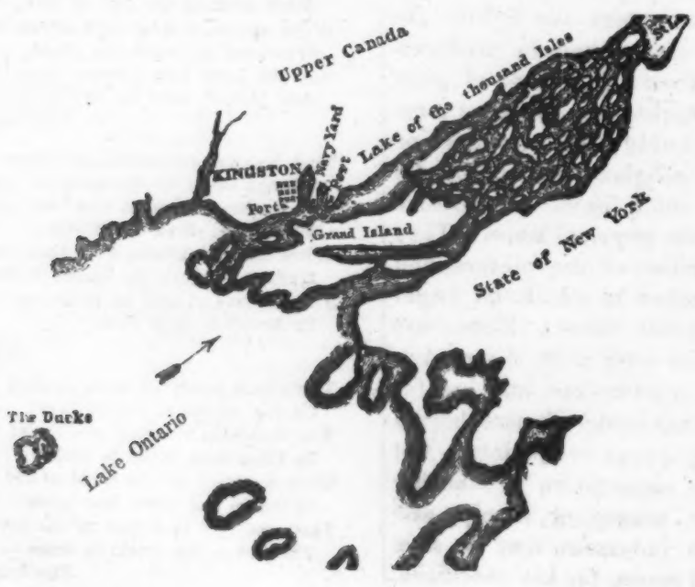
The numerous capes and promontories, the countless bays and inlets, and the occasional wide sheets of water, lend a charm to the whole, that would require the pen of fancy, dipped in a dew-drop, to describe.

To appreciate fully the exceeding loveliness of these "Emerald isles," you should visit them in the dreary stillness of an Indian summer day, just when the frosts have changed the deep green of summer to the sober livery of autumn, and the leaves of the forests begin to fall into the stream, like the moments of time as they drop into the fathomless ocean of an unknown future. 'Tis then with the services of two Canadian boatmen and a good Indian canoe, you can enjoy to the full extent the indescribable beauties to be found only among these watery gems; as you sweep past their margins, displacing, with the momentary ripple from your canoe, the graceful evergreens that hang their pendent branches in the crystal waters, and not a sound breaks the solemn stillness, save the lazy dip of your boatmen's oar; the enlivening notes of the forest songster; or the occasional plunge of a deer as he changes his abode from one island to another; 'tis then the heavenly influences of the hour and place irresistibly seize upon you, and you join your notes of joy and gladness with the hymn of nature that rises all around.

Days and weeks have I spent in this way in years long past, when life to me was but one bright summer day, and ere the glad and joyous feelings of youth were blighted by contact with the cold and beggarly elements that compose *le grande monde* of every-day life. We mix with the world, and alas! we become like it, cold, vainglorious, and selfish, daily striving to quench every feeling of sympathy with our fellows. At the same time, we will go into the streets and into the synagogues, and talk long and loudly of our obligations and our duties to mankind, and urge, with all the ardor of Wilberforce and the philanthropy of Howard, some great scheme of public charity; or discuss with energy and fervor a plan for the universal conversion of the world.

These islands have been the theatre of many bloody and stirring events during the old French and Indian wars, and would leisure permit I would relate some that were the delight of my boyish days. Here the "handsome Mr. Effingham" has laid some of the finest scenes in his Path-Finder —and here too the notorious Bill Johnson took possession of an island and plundered alike friend and foe. I recollect meeting his daughter at French Creek in 1837, but I must confess, bachelor as I am, that she appeared to me anything but a queen; but, as I may be prejudiced, I will not attempt a description of her.

Among these islands was the last favorite re-



sort ofthe Canadian voyageur, a race now nearly extinct in Upper Canada, but whose memory will long hover around the spots where they used to resort.

Many and many a time have I stolen to the rocky banks of the St. Lawrence, and as the shadows of evening began to close around, seated myself upon a projecting rock, and dipping my feet into the pearly flood, for hours listened to the distant song of the happy Canadian as he pulled his oar; and as the mellow sounds came sweeping o'er the waters, they fell upon my ears like the rich melody of the flute, and long after the line of batteaux had swept past, and were lost in the gathering gloom of the evening, I could hear the measured stroke of their oars, and the shout of the steersman as he shifted his paddle from one side of his boat to the other.

SOVEREIGNS OF THE WORLD.

ENGLAND.

Victoria, born in 1819. Queen, defender of the faith and of her ministers; who, in return for her patronage cling to her person and her table with the tenacity of ivy, and, like the ivy, would be in dust to-morrow but for the support to which they cling. She is the only wife in the empire who is not subject to her husband—*de jure* we mean; for, far be it from us to say that she is not subject to him *de facto*. If her being the wife of a prince whom she has chosen for herself be an auspicious omen, her reign cannot but be prosperous—as Heaven grant it may! That her husband is worthy of his good fortune is proved by the fact, that all the world has been talking about him for the last twelve months without uttering a word to his dispraise. He appears to be winning golden opinions by assimilating himself to the English gentleman—a character which the greatest monarch in the world might be proud to make his model.

FRANCE.

Louis Phillippe, born in 1773. A man of three titles—duke of Orleans, king of the French, and Napolean la Paix. The first, the work of birth; the second, the work of accident; the third, the work of talent. His fortune has been triple, like his titles—first a noble, next a Jacobin, and thirdly a king. His wealth is enormous, and he has used it for three purposes—to enjoy the reputation of being the richest man in Europe; to marry his daughters to all the needy princes of Europe; and to purchase the French by gilding Versailles for the Parisians, hanging up fables of French battles, and delighting them, from the king to the beggar, with the belief that they are the first populace in the world. A people of contradictions, they are now with one hand trumpeting a challenge to Europe, and with the other digging a ditch for the defence of Paris. They have erected a despot, under the title of a "citizen king;" and, to revive republicanism, are bringing back the bones of the haughtiest of emperors.

CHINA.

Taou Kwang. China is the great tea-warehouse of mankind. A quarrel having been raised by some of its dealers, the warehouseman has shut up his shop. Foolish as this was, the dealers stood on the point, and determined to starve—more foolish still. But this was not enough. The warehouseman turned some of his capital into powder and shot, and building up his shop windows, mounted them with guns. The dealers, already half ruined, resolved to go the whole length, turned the tea-money into cannon balls and Congreve rockets, and determined to burn down the warehouseman, shop and all, to force him to trade with them again—most foolish of the whole! The affair is going on still, and the dealers say that, when they shall have destroyed some thousands of Chinese lives, and wasted some millions of British money, they will only be the more amiable on both sides, and will have the privilege of buying more tea, and selling more poison than ever.

BELGIUM.

Leopold the First, born in 1790. The luckiest of the luckiest family of Europe. An Austrian captain of cavalry, who superseded the Prince of Orange in the alliance of the Princess Charlotte of England; enjoyed a pension of fifty thousand pounds a year for twenty years, of which he saved every shilling; next superseded the Prince of Orange in the possession of Belgium, and is now a king on the simple credit of having a good leg, doing nothing, and being a Coburg.

RUSSIA.

Nicholas the First, born in 1796—a daring, active, and ambitious despot. He began by excluding his brother Constantine from the throne, and is supposed to have the largest œsophagus of any sovereign in existence. He has already swallowed Poland—has made an enormous bite out of Persia; holds Tartary in his left hand, ready for a luncheon; Turkey lies dressed before him for a dinner, and what he is to sup on, or where, is known only to himself and his old namesake. But he is vigorous, vigilant, subtle, and persevering; and, therefore, the better to be baffled by Lord Palmerston!

PRUSSIA.

William the Fourth, born in 1795. Since the beginning of this year, successor to his father Frederick William the Third. His character is yet to be known. He is a supposed lover of war, and as all princes are for want of something else to do; and certainly no lover of the French, from his recollection of that most polished and plundering of all nations; but a worshipper of Russia, on the same principle that makes the African bow down.

AUSTRIA.

Ferdinand, born in 1793. In Austria, the government is wholly constructed on the principle

of the nursery; the people are children who think of nothing but their breakfasts, dinners, and suppers, and if furnished with dolls and dances, are as happy as the day is long. But they never *grow*. When refractory they are whipped, or put in the black hole. When good-humored, they are suffered to run about the fields, provided they never run out of sight of the head nurse, and can be brought by a check of the apron-string. While they live, they merely walk in go-carts—when they die, they are merely wrapped up and put to bed.

SPAIN.

Maria Isabella Louisa, born in 1830. The youngest of sovereigns, though by no means the most childish. Her mother manages the state for her; General Espartero manages the state for her mother; the city of Madrid manages the state for General Espartero; the mob manages the state for the city of Madrid; and the mob itself is managed by the beggar, the thief, and the soldier. The civil war has died out for want of material, and Spain is now amusing itself with shooting prisoners.

PORTUGAL.

Maria de Gloria, born in 1819. Sovereign of an "independent" country, which England alone saves from being swallowed up by Spain; ruling by an "imperishable" constitution which has been changed three times since her accession in 1826; and sitting on the throne of an enlightened, free, and "tranquillized" nation; themselves ruled by the priest, the police, and the mob of Lisbon.

SWEDEN AND NORWAY.

Charles John the Fourteenth, born in 1764; formerly Bernadotte—a singular instance of fortune, seconded by conduct. A Frenchman, entering the service as a common marine; then rising above the highest to the throne; and then rising above the man who placed him there by keeping the throne when Napoleon had lost it. He now lives the solitary survivor of the Napoleon monarchs; a bold, vigorous, and honest man; a brave soldier, a successful general, and in a country of strangers, a secure king.

TURKEY.

Abdel Mehed the Unfortunate, the son of Mahmoud the Unlucky, born in 1823. He has come to the throne as a man might come to his dinner, with a party of wild beasts round the table. It is not likely that he can much enjoy his meal. All the sovereignties of Europe are open-mouthed round him, and he is spared from hour to hour only by the show of their tusks at each other. But the first bite is the signal for universal battle, and which ever gorges, Turkey must furnish the meal.

HOLLAND.

William the First, born in 1775. The first king of the Netherlands—a kingdom cut from France by the scissors of the congress of Vienna, and cut in two by the hatchets of the mob of Brussels; a prince hard-headed, hard-working, and hardly used. To solace the cares of sovereignty in the foggiest land in the universe, he fell in love. But the duke dreaded the expense of a royal marriage; the prince of Orange dreaded a stepmother; and the old women of the court a rival. What king could prevail against this union of forces? William the First, with a broken heart and a helpless sceptre, had the sole alternative of marrying or resigning. A Marc Antony of seventy, he has resigned.

THE VILLAGE BLACKSMITH.—H.W. LONGFELLOW.

UNDER a spreading chestnut tree,
The village smithy stands;
The smith, a mighty man is he,
With large and sinewy hands;
And the muscles of his brawny arms,
Are strong as iron bands.

His hair is crisp, and black, and long;
His face is like the tan;
His brow is wet with honest sweat,
He earns whate'er he can,
And looks the whole world in the face,
For he owes not any man.

Week out, week in, from morn till night,
You can hear his bellows blow;
You can hear him swing his heavy sledge,
With measured beat and slow,
Like the sexton ringing the old kirk chimes
When the evening sun is low.

And children coming home from school
Look in at the open door:
They love to see the flaming forge,
And hear the bellows roar,
And catch the burning sparks that fly
Like chaff from a threshing floor.

He goes on Sunday to the church,
And sits among the boys;
He hears the parson pray and preach,
He hears his daughter's voice,
Singing in the village choir,
And it makes his heart rejoice.

It sounds to him like her mother's voice,
Singing in Paradise!
He needs must think of her once more,
How in the grave she lies;
And with his hard, rough hands he wipes
A tear from out his eyes.

Toiling—rejoicing—sorrowing—
Onward through life he goes;
Each morning sees some task begin,
Each evening sees it close;
Something attempted—something done,
Has earned a night's repose.

Thanks, thanks to thee, my worthy friend,
For the lesson thou hast taught!
Thus at the flaming forge of life
Our fortunes must be wrought,
Thus on its sounding anvil shaped
Each burning deed and thought.

NEEDLE-WORK.

Is the education of a young lady rightly conducted when the accomplishment of needle-work does not form a prominent part? We think not. That accomplishment is of great value to every female who prizes nicety, and would not be slavishly dependant on other's skill. Indeed, we deem it a great misfortune to any young lady to be deficient in the art of "plying the polished shaft" with activity, and many a one who looked on needle work as fitted only for the "lower sort," has been deeply mortified by accidents which a little knowledge of the despised accomplishment would have enabled her to remedy in a moment. And how extremely dependant must that lady be who has fostered an utter dislike toward needle-work! We pity her, and with the poet sing:—

"The gay belles of fashion may boast of excelling,
In waltz or cotillion—at whist or quadrille;
And seek admiration by vauntingly telling
Of drawing, and painting, and musical skill;
But give me the fair one in country or city,
Whose home and its duties are dear to the heart,
Who cheerfully warbles some rustical ditty,
While plying the needle with exquisite art.
The bright little needle—the swift flying needle,
The needle directed by beauty and art."

And what a beautiful and animated picture is presented by a circle of busy ones, their eyes flashing with pleasure as bright as the little needle in the light of the evening lamp! The contrast is great and ludicrous when such a group is compared with an idle family circle, where the members are gaping and groaning, and wishing that bedtime was near. And what a sight is the wardrobe of that lady who is no needle woman, and who has lost *her help*, and in vain seeks for another! Truly, there is truth in the quaint remark of a paragraphist, that when he saw a lady send her husband's coat or pants. to the tailor's to get one or two buttons put on, he wondered not that young men were skittish about getting married. They know not what they do, who, in seeking for a wife, give no attention to discover whether or not the one they admire is a needle woman. Alas! for the man who, phrenologically, has large *order*, but whose wife is no adept in the art of needle-work!

In Mrs. Gilman's annual, we find the following good thoughts on our subject, and we quote them as worthy the attention of our fair readers: "Cultivate a love of needle-work in your family. Whatever be the mental cultivation of a woman, she is made happier by this occupation. A young lady who superintends her own, and her mother's clothing, will have sweet, cheerful thoughts spring up her mind, unless she is diseased, or actually courts gloomy ideas. It is an odious sight to witness a family idle of a winter evening: and a no less beautiful spectacle when a circle surround a table, employing their needles, while one reads aloud. Let one of the party provide a map and dictionary for reference, and the knowledge obtained in an evening will be surprising. Looking out the meaning of words, makes a good pause, and stimulates thought and criticism."

"It is not probable that sewing ever checked the bright and thinking faculties. The dull will be dull still whether they read libraries or ply the needle, and this employment certainly gives a zest to after reading, to those who really love books. How should women bless their needle for rescuing them from the temptations which assail the other sex. Bright and innocent implement, whether plied over tasteful luxuries, or gaining the poor pittance of a day, thou art equally the friend of her whose visions tend to wander amid the regions of higher abstractions, and of her whose thoughts are pinned down to the treadmill of thy minute progress. Quiet rescuer from clubs and midnight revels, amid the minor blessings of woman's lot, thou shalt not be forgotten! Still come, and let thy fairy wand shine on her; still lend an ambitious joy to the play-things of the girl; still move unconsciously uader the glittering smile of the maiden planning thy triumphant results; still beguile the mother whose thoughts rove to her boy on the distant ocean; or the daughter, watching by the sick bed of one who has heretofore toiled for her; still sooth the long dreary moments of faithful love, and though a tear sometimes fall on thy shining point, it shall not gather the rust of despair, since employment is thy dower."

CURIOUS FACT.

If an egg, says Dr. Garnett, be reduced to ashes previous to incubation, the magnet discovers *no iron* in those ashes. But if an egg be placed under a hen; or any other state proper for hatching, and be reduced to ashes, in the same manner, subsequent to the chick's being produced, *iron*, in considerable quantities, will be found in the ashes. The experiment has been made.

SOURCE OF LUXURY.

There is not upon earth, air, or sea, a single flavor (cost what crime it may to procure it), that mercantile opulence will not procure. Increase the difficulty, and you enlist vanity on the side of luxury; and make that be sought for, as a display of wealth, which was before valued only for the display of appetite. This doctrine is exemplified in laver, a sea-weed, which is eaten by the poorest people in Scotland twice a-day, and is served at the tables of the wealthy in this country, as a first-rate luxury, in a silver saucepan, or lamp-dish.

PHILOSOPHERS have puzzled themselves how to define man, so as to distinguish him from other animals. Burke says, "Man is an animal that cooks his victuals." "Then," says Johnson, "the proverb is just, there is reason in roasting eggs." Dr. Adam Smith has hit this case. "Man," says he, "is an animal that makes bargains; no other animal does this—one dog does not change a bone with another."

THE ARCHITECTURE OF BIRDS.

FELT-MAKING BIRDS.

The resemblance of the texture of some of the more elegant nests of small birds to that of a hat or a piece of double-milled woollen cloth, may not have struck many of our readers, because the most compact of the nests alluded to feel loose when compared with a hat or a piece of thick cloth. But, when closely examined, the materials will be found arranged in a very similar manner, being, as it were, carded into one another, and not interwoven thread by thread or hair by hair, as we have before described to be the case with the nests of basket-making and weaver-birds.

The indispensable substance in all these nests, how different soever they may be in the outward materials, is fine wool, with which the moss, lichen, spiders' nests, tufts of cotton, or bark scales, are carefully and neatly felted into a texture of wonderful uniformity. The wool, of course, is the material by which this is effected, no other substance which the bird could select being capable of matting so nicely together both its own fibres and the coarser materials which are intermixed with it and stuck over the whole. In many of these nests, though not in all (following the principle of the hatmaker in binding the rim of a hat), greater strength is given to the fabric by binding the whole round with dry grass-stems, or more rarely with slender roots, which are partly covered by the staple feltwork of moss and wool. A circumstance also never neglected, is to bind the nest firmly into the forks of the bush where it is placed, by twining bands of moss, felted with wool, round all the contiguous branches, both below and at the sides.

"On the tenth of May, 1792," says Bolton, "I observed a pair of goldfinches beginning to make their nest in my garden; they had formed the groundwork with moss, grass, &c., as usual, but on my scattering small parcels of wool in different parts of the garden, they in a great measure left off the use of their own stuff and employed the wool. Afterward I gave them cotton, on which they rejected the wool, and proceeded with the cotton; the third day I supplied them with fine down, on which they forsook both the other, and finished their work with this last article. The nest, when completed, was somewhat larger than is usually made by this bird, but retained the pretty roundness of figure and neatness of workmanship which are proper to the goldfinch. The nest was completed in the space of three days, and remained unoccupied for the space of four days, the first egg not being laid till the seventh day from beginning the work."

Valliant has given more than one narrative of no little interest respecting the proceedings of several species of birds, which construct nests of feltwork in Southern Africa. The pinc-pinc (*Parus* ——), which is one of these, may appear, from a portion of his account, to rank among our weaver-birds. It may be remarked, however, that the cloth which it fabricates is not woven, but felted.

"The nest of the pinc-pinc," says Valliant, "is usually placed among prickly shrubs, particularly the mimosas, but sometimes on the extreme branches of trees. It is commonly large, though some are larger than others; but the difference is only in the external appearance; in the interior they are almost of the same dimensions, namely, from three to four inches in diameter, while the circumference of the exterior is often more than a foot. As the nest is wholly composed of the down of plants, it is either of a snowy whiteness or of a brownish color, according to the quality of the down which is produced by the neighboring shrubs. On the outside it appears to be constructed in an irregular and clumsy manner, according to the situation of the branches upon which it is built, and to which it is so firmly attached, part of them passing through its texture, that it is impossible to remove it without leaving one half behind. If, however, the nest have the appearance on the outside of being badly made, we shall be the more surprised, on looking into the interior, that so small a creature, without other instrument than its bill, its wings, and tail, could have wrought vegetable down in such a manner as to render it as united and of as fine a texture as cloth, even of good quality. The nest in question is entirely of a round form, having a narrow neck made in its upper part, by which means the bird glides into the interior. At the base of this corridor there is a niche that has the appearance of a small nest resting against the large one; and at the Cape it is generally supposed that this niche was made expressly for the male to sit upon, in order to keep watch while the female is hatching her eggs, and that he may apprize her of danger when she is at the bottom of the nest and unable to observe an enemy on the outside This idea, I must confess, is rather ingenious; but I have ascertained that this sort of niche is not contrived for any such purpose. The male, indeed, sits on the eggs as well as the female, and when either of them is thus occupied, the other never remains as a sentinel at the nest. I am quite confident of this, from having found at least a hundred of these nests, and having watched and observed the birds for whole mornings together. This little recess appears to be nothing more than a perch, by means of which the pinc-pinc may pass more easily into its nest, which, without such a contrivance, it might find some difficulty of accomplishing, as it could not move through so small an opening on the wing; and as the outside of the nest is slightly formed, it would injure it were the bird constantly to rest upon it, while this little space is as strongly built as the interior of the nest. To give it the required solidity, the bird has no other means than beating with its wings, and turning its body in different directions, as I have elsewhere related of the capocier. In consequence of this method of working, the work must necessarily be rounded and have the appearance of a very small nest; a circumstance which has led to the belief that it was made solely for the accommodation of the male. This, however, is so far from being the fact, that when a branch is so situated as to render the entrance into the nest easy, the little cell is not found; and, besides, I found several of these nests

with two or three perches, and others in which the perch had little of the form of a small nest.

"In general, these perch-cells are so narrow that the bird, small as it is, could not well rest upon them; and it would be much more difficult for the bird to which Sonnerat attributes this nest. Besides, as I have already stated, I examined the proceedings of these birds whenever an opportunity occurred, and never once observed one placed in the niche as a watchbird; but I have seen the male and female, on arriving at the nest, perch themselves on the nearest bough, hop from this upon the edge of the perch-cell, and then thrusting their heads into the hole, dart into the nest.

"These birds are so tame that there is no need to stand at a distance in order to watch and observe them at leisure, since they will enter in their nest although any one be near them. This is particularly the case in the wildest districts, where

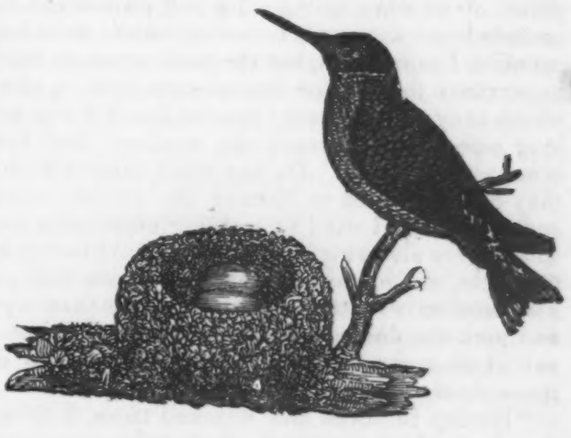
The Nest of the Pine-Pine (*Parus* ——).

they are not disturbed by children. Nevertheless, I was never able to surprise them in the nest, not even during the night, because it is invariably placed in the midst of brambles, and cannot be approached without disturbing them; it is never built in an isolated bush, but always in the midst of a clump of bushes difficult of access.

"It is also remarkable, that the first nest of a very young pair is never so large nor so well constructed as those which they afterward make; an observation which, I think, holds very generally in respect of birds.

"A nest so commodious and soft as that of the pine-pinc is envied by many birds which are unhappily superior to it in strength, and which, after having broken its eggs and compelled it to flight, despoil its habitation. Thus it frequently happens, that, when a pair of pinc-pincs have finished the workmanship of their little nest, and even sometimes after having made several of these, they have not had the pleasure of possessing an asylum for their young. A sad example of what is seen in the affairs of men, among whom the most powerful have exercised absolute dominion and obliged the weaker to obey."

We may with great propriety place here the smallest and prettiest nests with which we are acquainted, those of the humming-birds (*Trochilidæ*, Vigors), with whose appearance many of our readers may be familiar, as they are by no means uncommon in museums, their extreme neatness of execution and their minute size causing them to be highly prized. By far the best description of these which we have met with, is that by Wilson of the red-throated humming-bird (*Trochilus colubris*). "About the 25th of April," he says, "the humming-bird usually arrives in Pennsylvania, and about the 10th of May begins to build its nest. This is generally fixed on the upper side of a horizontal branch, not among the twigs, but on the body of the branch itself. Yet I have known instances where it was attached by the side to an old moss-grown trunk, and others where it was fastened on a strong rank stalk or weed in the garden; but these cases are rare. In the woods it very often chooses a white-oak sapling to build on, and in the orchard or garden selects a pear-tree for that purpose. The branch is seldom more than ten feet from the ground. The nest is about an inch in diameter, and as much in depth. A very complete one is now lying before me, and



Nest of the Humming-Bird.

the materials of which it is composed are as follow: The outward coat is formed of small pieces of a species of bluish-gray lichen that vegetates on old trees and fences, thickly glued on with the saliva of the bird, giving firmness and consistency to the whole, as well as keeping out moisture. Within this are thick matted layers of the fine wings of certain flying seeds closely laid together: and, lastly, the downy substance from the great mullein and from the stalks of the common fern lines the whole. The base of the nest is continued round the stem of the branch, to which it closely adheres, and, when viewed from below, appears a mere mossy knot or accidental protuberance. The eggs are two, pure white, and of equal thickness at both ends. On a person's approaching their nest the little proprietors dart around with a humming sound, passing frequently within a few inches of his head; and should

the young be newly hatched, the female will resume her place upon the nest, even while you stand within a yard or two of the spot. The precise period of incubation I am unable to give; but the young are in the habit, a short time before they leave the nest, of thrusting their bills into the mouths of their parents, and sucking what they have brought them. I never could perceive that they carried them any animal food, though I think it highly probable they do. As I have found their nests with eggs so late as the 12th of July, I do not doubt but that they frequently, and perhaps usually, raise two broods in the same season."

But as there would be no end to our enumeration of every individual bird which exhibits skill in felting together the materials of their nests, we think it will be more interesting to our readers to conclude this article with the lively narrative which Valliant has given of the proceedings of a pair of small African birds.

This romantic though accurate naturalist had contrived, by tempting titbits, to render the species alluded to, which he calls the Capocier (*Sylva macroura*, LATHAM), so familiar, that a pair of these birds regularly entered his tent several times a day, and even seemed to recognise him in the adjacent thickets as he passed along. "The breeding season," he goes on, "had no sooner arrived, than I perceived the visits of my two little guests to become less frequent, though, whether they sought solitude the better to mature their plans, or whether, as the rains had ceased and insects became so abundant that my titbits were less relished, I cannot tell, but they seldom made their appearance for four or five successive days, after which they unexpectedly returned, and it was not long before I discovered the motives that had brought them back. During their former visits they had not failed to observe the cotton, moss, and flax, which I used to stuff my birds with, and which were always lying on my table. Finding it, no doubt, much more convenient to come and furnish themselves with these articles there than to go and pick the down from the branches of plants, I saw them carry away in their beaks parcels of these much larger in bulk than themselves.

"Having followed and watched them, I found the place which they had selected for constructing the cradle which should contain their infant progeny. In a corner of a retired and neglected garden belonging to the good Slaber there grew, by the side of a small spring beneath the shelter of the only tree which ornamented that retreat, a high plant, called by the colonists of the Cape *Capoc-bosche*. In this shrub they had already laid a part of the foundation with moss, the fork of the branches chosen for the reception of the nest being already bedded therewith. The first materials were laid on the 11th of October. The second day's labor presented a rude mass, about four inches in thickness, and from five to six inches in diameter. This was the foundation of the nest, which was composed of moss and flax interwoven with grass and tuft of cotton.

"I passed the whole of the second day by the side of the nest, which the female never quitted from the moment my windows were open in the morning till nearly ten o'clock, and from five o'clock in the evening till seven. On the morning of the 12th, the male made twenty-nine journeys to my room, and in the evening only seventeen. He gave great assistance to the female in trampling down and pressing the cotton with his body, in order to make it into a sort of feltwork.

"When the male arrived with parcels of moss and cotton, he deposited his load either on the edge of the nest or upon branches within the reach of the female. He made four or five trips of this kind without interruption, and then set about helping his mate in the execution of her work.

"This agreeable occupation was often interrupted by innocent and playful gambols, though the female appeared to be so actively and anxiously employed about her building as to have less relish for trifling than the male; and she even punished him for his frolics by pecking him well with her beak. He, on the other hand, fought in his turn, pecked, pulled down the work which they had done, prevented the female from continuing her labors, and, in a word, seemed to tell her, 'You refuse to be my playmate on account of this work, therefore you shall not do it!' It will scarcely be credited, that, entirely from what I saw and knew respecting these little altercations, I was both surprised and angry at the female. In order, however, to save the fabric from spoliation, she left off working, and fled from bush to bush for the express purpose of teasing him. Soon afterward, having made matters up again, the female returned to her labor, and the male sung during several minutes in the most animated strains. After his song was concluded he began again to occupy himself with the work, and with fresh ardor carried such materials as his companion required, till the spirit of frolic again became buoyant, and a scene similar to that which I have just described recurred. I have witnessed eight interruptions of this kind in one morning. How happy birds are! They are certainly the privileged creatures of nature, thus to work and sport alternately as fancy prompts them.

"On the third day the birds began to rear the side walls of the nest, after having rendered the bottom compact by repeatedly pressing the materials with their breasts, and turning themselves round upon them in all directions. They first formed a plain border, which they afterward trimmed, and upon this they piled tufts of cotton, which was felted into the structure by beating and pressing with their breasts and the shoulders of their wings, taking care to arrange any projecting corner with their beaks so as to interlace it into the tissue and render it more firm. The contiguous branches of the bush were enveloped, as the work proceeded, in the side walls, but without deranging the circular cavity of the interior. This part of the nest required many materials, so that I was quite astonished at the quantity which they used.

"On the seventh day their task was finished; and, anxious to examine the interior, I determined to introduce my finger, when I felt an egg that had probably been laid that morning, for on the previous evening I could see there was no egg in it, as it was not quite covered in. This beautiful edifice, which was as white as snow,

was nine inches in height on the outside, while in the inside it was not more than five. Its external form was very irregular on account of the branches which it had been found necessary to enclose; but the inside exactly resembled a pullet's egg placed with the small end upward. Its greatest diameter was five inches, and the smallest four. The entrance was two thirds of the whole height, as seen on the outside; but within it almost reached the arch of the ceiling above.

Nest of the Capocier (Sylvia macroura, LATHAM), from Vaillant's figure.

"The interior of this nest was so neatly worked and felted together, that it might have been taken for a piece of fine cloth a little worn, the tissue being so compact and close that it would have been impossible to detach a particle of the materials without tearing the texture to pieces; yet was this only effected by the process which I have already described; and it must be confessed that it was a work truly admirable, considering the instruments of the little mechanics."

NAPOLEON.

AFTER a lapse of nearly twenty years, mankind begin to fully appreciate the character of Bonaparte, and award to him that meed of merit which he deserves. The asperity of feeling throughout Europe which his career aroused, is mellowed by time and the change of circumstances; and the lights of his political character continue to increase in brilliancy as we recede from the stormy period when the events of Waterloo changed his destiny from a king to a captive.

We have ever regarded Napoleon as a mighty instrument in effecting the political regeneration of Europe—in breaking up the fallow soil of the old kingdoms and dynasties, and preparing it for the reception of the seeds of civil liberty. The strength of Poland, Switzerland, Sweden, and, we may add, of Germany, where liberal feelings had long been cherished, was fast declining, and new accessions of power were constantly being made to the several hereditary monarchies of Europe, and France, the country of his adoption—a country which he loved—a country for whose honor he had donned the sword and shield, had just emerged from the crucible of a fierce and bloody revolution, when his genius began to develop itself. He had looked with an anxious eye upon the events of the revolution and the establishment of a directory, and seemed to perceive with prophetic vision the incapacity of France to maintain the stand she had taken, while so many discordant materials composed the machinery of her new government, and so many of the crowned heads around her were anxiously waiting to seize the first opportunity to restore the Bourbons and crush in the bud the fair flowers of promise which liberty had planted.

It may be called personal ambition that induced him to leave the army of Egypt, return to France, and procure the appointment of dictator or first consul from the Council of the Ancients. We will not deny that self was the moving principle in this first bold stride of his toward absolute rule. But even if it were so, do not his subsequent acts, when he had reached the acme of honor and power, justly silence the voice of those who would condemn his motives, and brand him as a tyrant and despot? He has been charged with the crime of reaching the throne of France by the sacrifice of a million of his fellow-beings. Was it for *his* elevation—*his* personal aggrandizement—that the cohorts of Gaul crossed the Alps and the Appenines, or gathered in battle array upon the sandy plains of the land of the Pharaohs? Did he, like Cesar (to whom he has been compared), destroy whole nations on his direct march to the banks of the Rubicon without bestowing a single blessing upon the lands he had depopulated, and, with an eye single to the obtaining of the purple, leave cities smoking in the path of his victorious army without one thought for the weal of the territories he had laid waste? Nay, he reared no standard but that of his country; and wherever in Europe he made monarchies bow to the eagles of France, he established laws upon principles very liberal compared with existing codes; and wherever he went he diffused among the people something of the warmth of that fire which burnt so brightly upon the altar of liberty in his adopted country. He broke the chains which, in many parts of Europe, bound the people to the car of

ignorance, superstition, and despotism—he weakened the temporal power of the pope, threw open the horrid dungeons of the inquisition, and, as far as laid in his power, poured the light of intelligence into every dark corner of the kingdoms he had overturned. Like other men, he was doubtless influenced by selfish motives, and wore the purple of royalty with complacency. He may have played the tyrant, but we should inquire how far he was influenced by circumstances, before we accuse him of being guided in his acts by the detestable *feelings* of a tyrant. In a word, in rightly estimating his character, and valuing the advantages incident to, and resulting from, his career, we should reflect upon the peculiar circumstances by which he was surrounded, and lose sight of the instrument in our admiration of the salutary effects of its power.

It is now nearly twenty years since, in his last will and testament, he said: "It is my wish that my ashes may repose on the banks of the Seine, in the midst of the French people, whom I have loved so well:" and now that wish is complied with. For that space of time his family have been exiles from France, his son has gone down to the tomb with the majority of his nearest relatives, a Bourbon is firmly seated on the throne to which the French people by acclamation called their great captain, and the feuds between France and England are nearly forgotten. The veterans of Napoleon's army have joined their leader in the world of spirits, and the enthusiasm created by the memory of his brilliant achievements waxes faint in the bosoms of the generation which has succeeded them. Under these circumstances France and England have recently awarded a small moiety of that justice and respect, which should have been long since paid to his memory, by permitting and causing to be removed, the entire remains* of Napoleon from Helena's rock, to the "banks of the Seine, in the midst of the French people," whom he "loved so well."

The following interesting account of the disinterment of the body of Napoleon, and its conveyance on board the vessel that carried it to France, is from an eyewitness of the scene:—

"The workmen were arduously employed from midnight until half-past nine o'clock in the morning, before the earth was entirely removed from the vault, all the horizontal strata of masonry demolished, and the large slab which covered the internal sarcophagus detached, and raised by means of a crane. The cemented masonry-work which enclosed the coffin on every side, and which, during the nineteen years that have elapsed since it was built, had suffered no detriment, had so preserved it from the effects of the atmosphere and the neighboring spring, that at first sight it did not appear to be in the slightest degree injured. The sarcophagus in flag-stones was perfect, and could scarcely be said to be damp.

"It is difficult to describe, with what anxiety, with what emotions, those who were present waited for the moment, that was to expose to them all that death had left of Napoleon. Notwithstanding the singular state of preservation of the tomb and coffins, we would scarcely hope to find anything but some misshapen remains of the least perishable parts of the costume to evidence of the identity. But when, by the hand of Dr. Guillard, the satin sheet was raised, an indescribable feeling of surprise and affection was expressed by the spectators, most of whom burst into tears. The emperor himself was before their eyes! The features of his face, though changed, were perfectly recognised—the hands perfectly beautiful—his well-known costume had suffered but little, and the colors were easily distinguished—the epaulets, the decorations, and the hat, seemed to be entirely preserved from decay—the attitude itself was full of ease, and but for the fragments of the satan lining, which covered as with a fine gauze several parts of the uniform, we might have believed we saw before us Napoleon still extended on a bed of state. General Bertrand and M. Marchand, who were present at the interment, quickly pointed out the different articles which each had deposited in the coffin, and in the precise position which they had previously described. It is even remarked that the left hand which General Bertrand had taken to kiss for the last time before the coffin was closed up, still remained slightly raised.

"The coffins were again sealed up with great care and placed upon a magnificent car drawn by four horses, and decked with funeral emblems. When the sarcophagus was placed on the car, the whole was covered with a magnificent imperial mantle, brought from Paris, the corners of which were borne by Gens. Bertrand and Gourgaud, Baron Lascases and M. Marchand. M. de Chabot, acted as chief mourner. All the authorities of the island, all the principal inhabitants, and the whole of the garrison, followed in procession from the tomb to the quay.

"From the morning the three French vessels-of-war had assumed the usual signs of deep mourning—their yards crossed and their flags lowered. The forts of the town and the houses of the consuls had also their flags at half-mast high. The men had their arms reversed, and the officers had crape on their arms, with their swords reversed.

"The *cortege* advanced slowly between two ranks of soldiers to the sound of a funeral march, while

* Sir Hudson Lowe, governor of St. Helena, would not grant the dying request of the emperor, to have his heart sent to his wife, Maria Louisa.

the cannons of the forts were fired, as well as from the Belle Poule and the Dolphin, the echoes being repeated a thousand times by the rocks above Jamestown. After two hours' march, the *cortege* stopped at the end of the quay, where the Prince de Joinville had stationed himself at the head of the officers of the three French ships-of-war. When the funeral car stopped, the prince advanced alone, and, in presence of all around, who stood with their heads uncovered, received in a solemn manner the imperial coffin from the hands of Gen. Middlemore. His royal highness then thanked the governor, in the name of France, for all the testimonials of sympathy and respect with which the authorities and inhabitants of St. Helena had surrounded the memorable ceremonial. A cutter had been expressly prepared to receive the coffin. During the embarkation, which the prince directed himself, the bands played funeral airs, and all the boats were stationed round with their oars shipped. The moment the sarcophagus touched the cutter, a magnificent royal flag, which the ladies of Jamestown had embroidered for the occasion, was unfurled, and the Belle Poule immediately squared her yards and unfurled her colors. All the manœuvres of the frigate were immediately followed by the other vessels. Our mourning had ceased with the exile of Napoleon, and the French naval division dressed itself out in all its festal ornaments to receive the imperial coffin under the French flag."

The remains of Napoleon were interred with great pomp and ceremony under the dome of the "Invalides," on the fifteenth day of December last. For many weeks previous, great preparations were made for the reception of the illustrious dead, and when the day of the funeral ceremony arrived, strangers from all parts of Europe crowded into Paris. It is estimated that the avenue to Neuilly contained on the morning of the fifteenth, five hundred thousand citizens, beside an immense number of the National Guard. A steamboat brought the body to the quay, where twenty-four seamen of the Belle Poule stood ready to receive the coffin, and bear it to the funeral car which was stationed under the portico of a Grecian temple.

The car, which was truly magnificent, consisted of five distinct parts—1, the base; 2, the pedestal; 3, the caryatides; 4, the shield; and 5, the cenotaph.

The base rested on four massive gilt wheels; it was twenty-five feet long, and eight high, and presented the form of a parallelogram, with a semi-circular platform in front. On this last stood a group of four genii, supporting the crown of Charlemagne; at the four angles were four other genii, in relievo, who held garlands with one hand, and with the other the trumpet of fame; above were fasces; in middle eagles, and the cipher of the emperor surrounded with crowns. The base and its ornaments were covered with burnished gold.

The pedestal placed on this base was eighteen feet in length by seven in height, and entirely covered with gold and purple cloth, with the cipher and arms of the emperor. On both sides hung two velvet imperial mantles, sprinkled with bees. Behind was a profusion of flags.

On this pedestal stood fourteen caryatides, somewhat larger than life, entirely gilt over, and supporting with their hands an immense shield. These caryatides were placed, six on one side, and six on the other, back to back, and two others at the extremities.

The shield was in gold, of an elongated oval form, and leaded with fasces of javelins.

The sarcophagus, of an antique form, was raised above the shield. In the centre, on a rich cushion, lay the sceptre, the hand of justice, and the imperial crown, studded with jewels.

This monument of gold and velvet, about fifty feet high, was drawn by sixteen black horses, yoked by fours, and so caparisoned as only to show the extremity of the feet. The caparisons were cut in the shape of those of the tournament horses of the middle ages, and in gold cloth. The manes were adorned with gold tresses and white plumes, and valets, dressed in the livery of the emperor, led the horses.

No description can give an adequate idea of the enthusiasm which the ceremony excited. Everywhere on the passage of the hearse the loudest acclamations resounded, and cries of "Vive l'Empereur!" rent the air, particularly when it reached the triumphal arch. The Prince de Joinville was exceedingly well received, but not a cry of "Vive le Roi!" was uttered. The day passed off quietly, although several attempts were made to create confusion.

About two o'clock proclamation was made that the body had arrived in the inner court of the Invalides.

The Paris correspondent of the London Times, gives the following sketch of the concluding ceremonies:—

"The archbishop of Paris and his magnificent train of clergy again started, after delay, to meet the coffin, and perform the rites of absolution at the entrance of the church; and after a delay of impatient but silent expectation, the funeral procession entered, headed by the train of priests. Before the coffin, walked the Prince de Joinville, who had accompanied the body to its final destination. I had heard the king announced, a loud voice called out, "Le Roi!" but I did not see his majesty pass in the funeral train; and I presume that, after performing the reception of the body at the entrance, he found his way to his appointed seat during the mass by another passage. To

see the coffin borne along the nave was a sight that set all the *mesbuinene* of the painted theatrical show around at defiance. It was one of sentiment, and not of show. As the coffin advanced, borne upon the shoulders of the thirty-two non-commissioned officers appointed for that purpose, accompanied at each end by General Bertrand and the marshals who occupied each corner, covered with the funeral pall, with the imperial crown reposive above, there was an evident thrill, an evident electric emotion, which pervaded the crowd that lined its passage. The old Invalides, who occupied the first rank, were deeply moved, as he whom they had obeyed for the most part with such fervor and enthusiasm in life, was borne along in death. Their emotion appeared to be one of pride and joy more than of grief. He was restored to them. The same sort of electric movement of feeling seemed to animate the mass of military men who lined one side of the dome as the coffin was carried along up the steps that led to it from the nave. In a few minutes more it was being raised into the catafalque that occupied the middle of the dome, and the mortal remains of Napoleon reposed where his last wish was that they should repose—a wish which he thought in his dying moments to have been a vain one—in the heart of his own country, in the place worthy of France's greatest general—under the dome of the Invalides.

ENGLISH ARCHES.

THE arch is one of the principal features in modern architecture, and enables the artist to give a light and graceful elegance to his structures which could not be done in the absence of this principle. The arches of the earlier Saxons

Circular Arch.

were circular, as represented in the engraving, and a few specimens of this style of building may still be seen in some parts of England This style generally prevailed during the reigns of the Saxon and Norman kings of Britain. It was the earliest form adopted by the Saxons, and continued in use till the reign of Stephen, about the year 1135. The best-preserved specimens are, the entrance to the Temple church, London; the abbey gate, Bristol; and the church of Romsey, in Hampshire. The above engraving represents the entrance to the Temple church. The doors of this style are generally very richly carved, as well as portions of the arches.

During the reign of Henry III. the circular arch began to disappear, and about 1220, it was entirely superseded by the pointed arch. The change, however, was gradual, and in some buildings both kinds were intermingled. Several specimens of this half Norman style, as it was called, are still to be seen, the most beautiful of which is the door of St. Mary's, Lincoln, represented in the subjoined engraving. This is called

Pointed Arch.

the *Early English Style*. At first, the windows were very narrow in proportion to their height, and were called lancet-shaped; two or three were frequently seen together, connected by a drip-stone. But they were soon made wider, and divisions and ornaments were introduced.

There have been many conjectures concerning the origin of this style, so nearly resembling the more truly Gothic which soon afterward appeared. The most reasonable opinion is, that the crusaders brought a knowledge of the pointed arch with them on their return from the Holy Land, and hence the style has been called Saracenic. It was known in the East as we have already observed in the mosque of Daccan, in India; and it was about this period that the Moors, then in possession of Granada, cultivated architecture of a similar style, to a great extent. The Alhambra, the royal palace of the Arab kings of Granada, was probably one of the most splendid specimens of the Saracenic style, ever erected. It was built about the middle of the fourteenth century, and many portions of it are well preserved at the present day.

Gothic Doorway.

About the year 1300, a more ornamental style of architecture was introduced into England and upon the continent. It was called the *Decorated English Style*, and was used chiefly for sacred edifices. The foregoing engraving represents the doorway of Lincoln cathedral, and may be considered an excellent representation of this style, in which the windows are large and wide, and divided into several lights by mullions, or perpendicular narrow columns, branching out at top into various forms of tracery, such as circles, trifoils, &c. Ornament after ornament was added to this style, until about the year 1380, so profuse were these embellishments, that it obtained the title of the *Florid Style*, and Gothic architecture in all its glory was cultivated and admired. Tall spires, decorated to the very pinnacle, shot up into the clouds, and windows of stained glass shed gorgeous lights over the profuse decorations of the interior of the churches.

Concerning the origin of Gothic architecture, there are various opinions. Dr. Mollier has thus briefly summed them up: "1. From the holy groves or thickets of the ancient Celtic nations. 2. From huts made of the entwined twigs of trees. 3. From the structure of the framing in wooden buildings. 4. From the pyramids of Egypt. 5. From the imitation of pointed arches generated by the intersection of semicircles."

The mingling of branches over an avenue formed by trees, might easily suggest the pointed arch, as they often form very perfect ones, especially the branches of elms. But it is quite probable that the pointed arch was first suggested by the intersection of circles; and as this is one of the peculiar characteristics of the Gothic style, it may be traced directly to the original circular arch of the Saxons, who derived their ideas from the Romans. Science and taste made improvements, and the rites of the Christian religion, as practised from the twelfth to the fifteenth century, no doubt had a great influence upon the interior form of their places of worship. The religious rites of Greek and Roman paganism were splendid and numerous, yet they were chiefly performed in the open air. Therefore architecture was brought into requisition only in erecting temples for their idols and altars. But the Christian church, under the guidance of the Roman pontiff, required, in the cold regions of northern Europe, shelter for the worshippers, and hence these edifices were arranged in accordance with the purposes for which they were intended. A long and lofty gallery called the *nave* was constructed for their splendid processions; *aisles* were made for the reception of the vast multitude of witnesses of the ceremony; *choirs* were set apart for the solemn ceremonies of the priestly office, and *chapels* were erected around the edifice by the bounty of grateful individuals. Allowing this theory to be correct, a theory advanced by one of the best modern writers on architecture, and we perceive the splendid Gothic edifices of Europe springing into being from the impulse given by the necessities of the religious rites to which they are consecrated. Their ornaments are the creations of taste, added to the productions of necessity and convenience. Yet this taste is entirely at variance with that of the purely classic which adorned the temples of Greece in her palmy days; and the sculpturesque ornaments of Gothic edifices partake largely of the grotesque character. As a whole, it is a grand and imposing style, well adapted to the splendid rituals of the Christian church in the fifteenth century. "Gothic architecture," says Madame de Stael, "presents to my mind the image of frozen music."

Outline History of the Fine Arts.

THE LEGAL RIGHTS OF WOMAN.

This is the title of an able paper from the pen of an accomplished member of the Massachusetts bar, in the last number of the Christian Review We give an extract:—

She is justly neither the servant nor sovereign of man; neither the slave of his will, nor the proper object of his obsequious servitude, or his adoration;—but his equal, his fellow-being, his partner in the social state.

Such is the *American female*, whose legal rights we are about to consider. And in the end we shall appeal to every unbiased judgment, if her rights are not *equal*, though they may not always be *identical*, with our own. This distinction is important; and the omission of it occasions a grand error of modern reformers. They suppose that equality of *rights* gives title to an equal participation in *every duty* and *privilege* of civil life; and that if one man has certain rights, and another certain others, *both of equal value*, yet there is no *equality* unless the rights are identically the same. We shall not *now* argue the point with those who maintain that woman is *wronged* unless she is admitted to *share with* man in *all* the labors and duties of social and political life. We admit that

she is *intellectually* capable of them all. But we would just ask if God has made *no* difference in the circumstances of the sexes? Is there *no* fitness in confining some duties exclusively to one sex, and others to the other? Are the labors of the field, or those public offices, the time of whose performance is fixed by the calendar, appropriate to women? Or, do the implements of female employment become the hand of man? These questions are already settled by the low estimation in which *both* sexes hold those of *either*, who interfere with the pursuits assigned, by nature and usage, to the other. Our *argument* will rather consist in a brief *statement* of female rights, as they are recognised by law in this country: classing them into, first, the *political* rights of women; second, her *civil* rights while single; and lastly, her *connubial* rights, or those which she possesses in consequence of her marriage.

In the term "*political rights*," is involved all which the subject or citizen may lawfully claim of the state or sovereign, whether it be of privilege or protection. It includes not only the right of electing and being elected to public office; but the right of being protected in person or property, against the aggressions of another nation; the right of being protected by one's own government, in the free enjoyment of life, health, and reputation; of personal security, personal liberty, and private property; the right of being governed by known laws; the right of exemption from unreasonable search of one's dwelling-house, or seizure of one's papers; from being twice put in jeopardy of life and limb upon the same criminal accusation; from being compelled to be a witness against one's self; from cruel and unusual punishments, excessive fines, and excessive bail; the right of just compensation for all private property taken for public uses; and the right of trial by jury. All these, except that of electing and being elected to *political* office, are *political rights of woman*, as well as men; and are *enjoyed* equally by both sexes.

In regard to the latter, the propriety of a lady's HOLDING and EXERCISING public office has been decided by the customs of society, in originating which her own sex has a large and perhaps an equal share. If she were eligible to one political office, it would be because her *sex* does not unfit her for *any:* and the same code that would admit female *legislators*, ought, in equal reason, to make them eligible to all other offices. But how would ladies themselves regard a *female sheriff*, or *captain of militia*? The very constitution of society, has, of necessity, allotted these employments to man. Not that he is wiser, and *thus* more capable of exercising them; but because, in the distribution of social duties, these are more befitting his sex, and more congenial with other pursuits in which he is engaged.

But what reason is there, it may be asked, to exclude her from *giving her suffrage*, in the election of public officers? Beside the reason already given for rendering her ineligible to office, there are considerations of public expediency and wisdom, which govern this part of the law. In all free, elective governments, *parties* will exist. The elements of discord are sufficiently numerous, and active, and pervading, to give employment to all the wisdom and all the force, moral and physical, which society can command, to control their destructive operation. Amid the storms which beat without, in the political world, the domestic hearth is yet the sanctuary of repose, and the domestic altar still receives the offering of united hearts, to the God of peace and love. But if, in in addition to all our other sources of party strife, as if the thousand existing elements of contention could not suffice, we were to array male and *female* electors with *their* candidates in opposition, it is easier to imagine the uproar that would ensue, than to foretell when or how it would end. Even Discord,

> "With delight would snuff and smell
> Of mortal change on earth—and high turn up
> His nostril wide into the murky air,
> Sagacious of his quarry from so far."

The experience of all nations has shown that the state of society has been rendered miserable whenever both sexes have mingled in party politics. "If women," says Madison, "must be showing their zeal for the public, let it not be against those who are, perhaps, of the same family, or at least of the same religion or nation; but against those who are the open, professed, undoubted enemies of their faith, liberty, and country."

It is for the preservation of social peace, therefore, and of domestic happiness, that our law has assigned the labor of moving the *political* machine to *men.* In this division of labor, the rights of woman are not infringed. As in a commercial partnership, one member may have the care of books, another of the purchases, and another of the sales; or in a corporation, one agent may have the exclusive charge of one department, and another of another, while other members have only a general participation in the profits; and yet the *rights* of all are equal, though their *duties* are various; so, in this allotment of political labors, the rights of none are invaded. Woman is still a member of political society; entitled to its benefits and its protection. If her ships or goods are illegally captured by a foreign power, she has the same right, with all others, to require indemnity from the national government. If she is made a prisoner-of-war, or otherwise unlawfully detained or enslaved, her own government is bound to ransom her, as in the case of any other citizen. Nay, more; for a *prisoner* she cannot be, by the laws of modern warfare; and if her husband is a captive or an exile, she is permitted at her pleasure to share his fortunes, or visit and relieve him. A recent instance of this immunity occurred in Upper Canada, in the case of M'Kenzie, whose wife was suffered to join her husband, even when in arms against his own sovereign. In all cases of sovereign aggression, she may claim the aid of the sovereign power, to vindicate her wrongs. Wherever the rights of the citizen are secured by the constitution, other than those of office-holding and of suffrage, those rights are her own.

The following was engraven on the tombstone of a lady, 'She was always busy, and always quiet.'

The Sacrifice at Lystra.

THE CARTOONS OF RAFFAELLE.

No. IV.—THE SACRIFICE AT LYSTRA.

THE man cured by St. Paul at Lystra had never walked, having been a cripple from the hour of his birth. His conversion, it would appear, had preceded this signal benefit. He had been listening to the discourse delivered by the apostle, "who steadfastly beholding him, and perceiving that he had faith to be healed, said with a loud voice, Stand upright on thy feet! and he leaped up, and walked." This evidence of supernatural power, exhibited before the eyes of the whole city, might have been expected to produce an immediate conviction of the divine origin of the new faith. The effect, however, was different: the miracle was indeed not only admitted, but followed by a burst of religous enthusiasm; but the acknowledgment of superhuman interposition was transferred by the pagans to their own deities, and Paul and Barnabas were saluted, not as the apostles of Christ, but as Mercury and Jupiter. "And the priests of Jupiter brought oxen and garlands unto the gates, and would have done sacrifice with the people." Raffaelle, whose imagination, although regulated by the most rigid accuracy of judgment, was sensitively alive to the *picturesque*, has availed himself of this point in the narrative, to produce a composition strikingly varied and beautiful. The unostentatious acts of the apostles are here mixed up with the pompous rituals of heathen superstition. The priests bending in solemn devotion, the inferior ministers engaged in the act of sacrifice, the victim sheep and oxen, the beautiful children who officiate at the altar—these objects, in all their varieties of action, character, and costume, present so rich a combination of materials as would, perhaps, in the hands of any other painter, have encumbered the effect, and distracted the attention. Throughout the cartoon, however, the unity of the subject is completely preserved. Paul and Barnabas are immediately distinguished, not only by the general attention being directed toward them, but by nobility of mien and action. They stand also on an elevated plane, and are separated by a considerable interval from the tumultuous crowd which approaches them. Raffaelle's first object, in all his works, is the clear development of his story, which is sometimes more effectually accomplished by departing from than adhering to the literal fact. He never loses sight, however, of any leading point in the text; and as the apostles are described on this occasion to have "run in among the people," he has shown another disciple who forces his way through the crowd, protesting vehemently against the impious ceremony, and endeavoring to arrest the arm of the executioner, which is uplifted to strike the victim. The energetic action of these figures contrasts finely with the still and solemn air of the priests; the whole composition, indeed, is admirably balanced with alternations of action and repose. But the main point to be impressed on the spectator was the miraculous cure. This is accordingly done with surprising force and perspicuity. At the right extremity of the cartoon appears the man who has been healed; his figure inclines to tallness, and he is well-formed throughout; his legs, in particular, are muscular and symmetrical. By what artifice, then, has the painter so clearly expressed that this is the cripple who was lame from his birth?—Impelled by emotion too big for

utterance, with extended arms, pressed hands, and every demonstration of enraptured gratitude, he rushes forward toward the apostles. His crutches, now useless, are thrown on the ground, and there is in his person no evidence of his former unhappy condition, except in that cast of features peculiar to deformed persons. He is surrounded by individuals anxious to assure themselves of the truth of the miracle by ocular inspection. An aged man, whose habit and aspect announce him to be a person of rank and authority, with a mingled air of curiosity and reverential awe, lifts the garment from the limb which has been healed, while his other hand is at the same time uplifted in astonishment at the incontestable proof before him. The same sentiment is expressed, with characteristic discriminations, among other persons in the group.

It is said by the commentators on the cartoons, that St. Paul is rending his garments in horror of the sacrilegious rite about to be performed. It never appeared to us that this was the action intended by Raffaelle, the violence of which would have ill accorded with that apostolical dignity which he was always careful to preserve. We rather think that he meant the apostle to be giving utterance to the exclamation which he used on this occasion: "We are also men, with passions like unto yourselves;" and baring his breast in attestation of his humanity. St. Barnabas, who stands behind, gives thanks to God for the miraculous manifestation of his power.

Nothing perhaps in this cartoon fixes attention more strongly than the beauty of the two children at the altar; the one sounding musical instruments, the other holding a box of incense. Vacant, happy, and absorbed in their employment, they scarcely seem conscious of the events which are passing before them. No artist, perhaps, ever approached Raffaelle in the delineation of infantine innocence and simplicity.

That part of the composition comprised in the sacrifice was drawn by Raffaelle from an antique basso-relievo. His known wealth was such that, as Reynolds justly observes, he might borrow without the imputation of poverty. Penny Mag.

IRON ORE.

This valuable mineral substance is found in Orange Co. (N. Y.), in great abundance. With a few exceptions to be noticed hereafter, it is associated with our primitive rocks. The most abundant as well as most valuable ore is the magnetic oxyde. It is generally found in that species of primitive rock so common in the highlands of the county, and often called granitic gneiss or gneissoid granite. It lies in beds and layers in this rock, having its line of bearing and its dip. Where it exists in layers, they are from one inch to twenty feet in thickness, in some places alternating several times with the layers of rock. Where it is found in beds, the magnitude of the largest has never been ascertained. In the line of bearing, the extent of our deposites of this ore is not yet well ascertained.

On the southeast side of Butter hill it is traced from the river, and from nearly opposite the village of Canterbury, by way of Monroe, quite into New-Jersey, a distance of about twenty-five miles.

The most westerly of the great ore deposites now wrought, is called the *Clove mine*. It is the property of George Wilks, Esq., situated about a mile south of the village of Monroe. It has been open many years, and much ore has been used. The ore is the magnetic oxyde. It is compact and granular. The latter is called shot ore. The pyrites are more or less disseminated through it. It makes *red* or *hot* short iron. It requires roasting before it can be used. At the south end of the mine exists what is here called soft ore; this is the ore in a black powder. It is taken up with the shovel, ready for use, requiring no roasting process. It would seem to have resulted from the decomposition of the pyrites, and is abundant. The solid ores of this mine are in layers, having the direction and dip, and alternating with the rock. The layers are from a few inches to a yard and more in thickness. Several successive layers, and the intervening ones of rock, have been penetrated in three places, a few rods distant from each other. A large quantity of the soft ore has been used. Altogether, the mine has been opened about five hundred feet in length, and evidently extends over a much larger surface, in all directions.

The immediate associates of this ore are mica, hornblende, quartz, feldspar, asbestos, occasionally carbonate of lime, serpentine, chrome crystallized in octohedrons; the latter, however, is rare. A kind of soapstone is also connected with this ore.

About one mile southeast of the Clove mine, in a straight line, is the *O'Neil mine*, or, as it is commonly called in the vicinity, the Nail mine. This is a vast bed of magnetic oxyde of iron. It is often in the seams, beautifully crystallized in octohedrons and cubes; the latter are rare; it also contains pyrites, and requires the roasting process. Magnetic pyrites are also occasionally found in this mine; the ore is very hard and compact; the most so of any of our standard ores. This ore is very much esteemed. It makes a good iron, which is of the *red short* description. This mine is the property of Gouverneur Kemble, Esq. Large quantities of this ore are used. The bed is now open one hundred and fifty by five hundred feet. A wall is partially exposed on the southeast side, but no appearance of limit is anywhere else visible. One dike has been crossed, which is several feet thick, cutting the bed perpendicularly, and nearly east and west. The immediate associates of the ore in this mine, are calcareous spar white and abundant, rose-colored garnet, green coccolite, dark-colored sahlite and hornblende massive; arragonite, the flosferri variety, amianthus, and serpentine.

Forshee Mines.—These are a quarter of a mile southwest of the O'Neil mine. It is composed of a great number of layers of ore, alternating with the layers of rock. The whole hill, which is more than one fourth of a mile long, and nearly as wide, appears to consist of rock and ore, the

ore forming a large proportion of the whole. Some layers are granular, forming handsome shot ore; some are compact, and rather more free from pyrites than usual. In these mines are large bodies of the ore in black powder, which is entirely destitute of pyrites. Umber also is connected with the Forshee mines, and appears to be abundant and of fair quality.

The minerals, associated with the ore of the Forshee mines, are red garnet, brown tremolite, green coccolite, serpentine yellow and black, calcareous spar, asbestos, and mica.

Five miles southeast of Monroe works is the *rich iron mine*, the property of Hudson M'Farlan, Esq. It is a fine rich ore, strongly magnetic. It has not been extensively wrought, although there are evidences of an abundant deposite. Connected with this mine, are mica, hornblende, or, as this mineral is generally called in Cornwall and Monroe, black-jack sahlite, magnetic pyrites.

The *Greenwood mine*, is two miles southeast of the Greenwood furnace in Monroe. It is in the granitic gneiss. Three layers of ore, separated by a few feet of rock, are exposed there. The middle one of these is only sufficiently uncovered to reveal its thickness. This one is nine feet. This mine is covered by what some miners call a rider, that is, rock lying nearly or quite flat, or hanging in a direction contrary to the dip of the ore and rock in which it lies. This rock-roof covers this mine; after its removal, the ore and its walls lie conformably, that is, dipping to the southeast. The ore is mostly compact and hard, containing considerable sulphur, and requires roasting. It is associated with quartz, hornblende, and mica. Preparations are making to use it extensively.

Long mine is about five miles southwest of Southfield furnace, and two and a half miles west of the saw-works. This mine has been known since long before the revolution, and is the only one in the county at which anything like systematic mining has been attempted. This ore has its bearing and dip corresponding with those of the rock. Only one layer of the ore has been worked, which is six feet thick. The ore is strongly magnetic, and said to be as good as any in the Highlands. It is associated with hornblende, sahlite, slaty gneiss, gneissoid hornblende, and reddish granite—has a small quantity of pyrites—requires roasting, and gives a red short iron.

This mine has been worked three hundred yards in length and about forty in depth. The early working has all caved in; but fine pillars of ore sustain the hanging wall where the work has been recently prosecuted. Vast quantities of ore have been taken from this mine without any appearance of its failing. It belongs to the Messrs. Townsend. Only one dike has ever occurred in this mine; it was one foot thick, and made no change in the direction of the ore. It cannot now be seen—is worked seventy feet deep.

The *Patterson mine* is half a mile southwest of Long mine—ore very similar in all respects—makes excellent *red* short iron—is in the granitic rock. The ore is twenty feet thick—opened one hundred and fifty feet long. About ten thousand tuns of this ore have been used. It is strongly magnetic, and has polarity.

About the middle of the mine, as now open, is a transverse slip or *heave;* the mine and its walls appearing as if they had slid downward and forward to the southeast, causing an angle in their line of bearing. It is the property of the Messrs. Townsend.

Mountain mine, *Antone mine*, *Conklin mine*, and *New mine*, are a group from twenty-five to fifty rods northwest and north from the Patterson mine, belonging to the same proprietors. They lie in nearly parallel beds; the ore of all apparently similar—a rich black magnetic oxyde, possessing polarity. Ore to the amount of five thousand tuns has been used from these mines; the ore and walls nearly vertical; layers of ore from four to eight feet thick. The new mine has a cap of rock lying nearly horizontal; associated minerals, sahlite, hornblende, and feldspar. The sahlite is laminated and very beautiful; iron red short.

Crossway mine, upon the same estate, is from four to five hundred yards southwest of Mountain mine. This bed is fourteen feet thick, and has been wrought sixty-five feet deep and one hundred and fifty yards in length; ore and iron very similiar to those of Patterson mine; moderately *red short;* ore and walls nearly vertical; twenty-eight thousand tuns are supposed to have been used from this mine; associated minerals, hornblende, epidote, mica, and adularia.

Sterling mines, belonging to the same gentlemen, are about a mile southwest from Crossway mine, at the south end of Sterling pond. These mines, or *this vast mine*, is in the northern end of a mountain of moderate elevation; its length is is about three miles. The ore is *rich*, granular, and compact; its product, *cold short* iron; is one of the earliest known iron mines in the United States. The minerals connected with this ore are crystalized green hornblende, sahlite, green mica, flesh-colored feldspar, and the ore in octohedral crystals. The rocks are granite, and a coarse showy sienite. There is abundant evidence of great disturbance in the stratification in this mountain, and in all the vicinity. The rocks dip to the northeast and east, with the ore conformable to this arrangement; at least such is the general arrangements, so far as can be ascertained in this mass of confusion. The ore alternates with the rock; how often cannot of course be ascertained. The ore lies naked about fifty rods wide by one hundred and fifty yards in length. In many places its surface is even and polished as if it had been ground off by the sliding of the rocks.

The *Belcher mine* is upon the same property, and very similar ore to that of Sterling; it makes *cold short* iron. It is one and a half miles southwest of Sterling mines, and at the southern termination of the same mountain. The ore has been worked about one hundred and fifteen feet wide without finding a rock wall on either side. It is believed to be a prolongation of Sterling mine.

Red mine or Spruce swamp mine is nearly three miles south of Long mine. All the ores of this mine are magnetic and full of pyrites, so much so that only a moderate amount has been used.

They decompose rapidly when dug up and exposed to the open air. In this manner the surface of this mine has all been reduced to powder of an iron-rust color; like several other mines the ore alternates with the rock.

Magnetic oxyde of iron is also found of good quality in many places in Cornwall; but these have not been opened to much extent. Near the foot of Butter hill, on the land of Mr. Clarke, on Deer hill, on the land of Mr. Luke Wood, and that of Thomas Titus, are indications of valuable deposites of this ore.

Two and a half miles west of the village of Canterbury, in Cornwall, is the *hematite* or *limonite* mine of Mr. Thomas Townsend. For the last two years this ore has been considerably used, and although a lean ore it makes excellent iron. It is mostly in powder, or very small fragments, mixed with balls and pieces of the hematite, of a few pounds weight. It lies in limestone rock, and between the limestone and the grit rock. These rocks, where connected with the ore, are decomposed to great extent, and mixed in the state of powder with the ore; hence the ore requires washing.

This stratum of limestone and hematite can be traced across this town into Monroe, until we reach the magnetic oxydes already noticed. It is seen a quarter of a mile north of the Clove mine, and at many places intermediate between this and the Townsend mine in Cornwall. The distance between these extreme points is full ten miles.

Hematite is also found along the whole western side of Bellvale mountain, and in places along the Warwick valley, to the New Jersey line.

Thus it appears, that in Orange, one great iron region extends from the Hudson river on the east side of Butter hill quite across to Rockland county.

Another on the west side of Butter hill follows the valley across Cornwall, east of Skunemunk mountain, through Monroe, and by way of Sterling into New Jersey, and far across that state.

The amount of ore in these deposites, which is of easy access, and has the most perfect facilities for cheap mining, is perfectly inexhaustible.

The amount of iron to be made in the county in all time to come, can only be limited by the supply of coal necessary for the reduction of the ores. N. Y. Geological Reports.

SELF-INSTRUCTER IN PHILOSOPHY.

No. II.

In our last number we treated upon the *essential properties* of bodies, *Impenetrability*, *Extension*, *Figure*, *Divisibility*, *Inertia*, and *Attraction*. We noticed briefly the power and uses of *attraction of cohesion*, and we now propose to examine other illustrations of this property, and the *attraction of gravitation*.

It might be supposed that all bodies would become more and more dense by the attraction of cohesion, when that property depends upon the contingency of the actual contact of individual particles, for an increase in the number of particles in a body, coming in contact, must increase its density or hardness. But to this tendency of matter there is an opposing influence, which pervades all created things. It is *heat*, a fluid much more subtile than the air. It insinuates itself more or less between all particles of matter; and its power is repulsive, continually forcing them asunder. It is the constant struggle between the contending forces of heat and attraction, that prevents that extreme degree of density which the sole action of the attraction of cohesion would produce. The more a body is heated, the less strong is the attractive power. This is illustrated in all metals that may be melted, wherein heat so far destroys or counteracts attraction, that a solid becomes a fluid. By the same application of heat to fluids, a similar result is seen—the attraction of cohesion is weakened, and the fluid is converted into vapor. But when the heat is withdrawn, the attraction of cohesion will again unite the particles of vapor and form a fluid. Thus the vapor, which the heat of a summer's sun causes to rise from the surface of lakes and rivers, is again collected into a liquid form by cohesion when the sun is below the horizon, and we find it in drops of dew upon the grass and flowers, and leaves of trees, at the opening of the morning. Thus, too, particles of vapor, suspended in the air, cohere and descend to the earth in the form of rain-drops.

There is another singular effect of attraction of cohesion, called *capillary attraction*. This enables liquids to rise above their ordinary level, through tubes, the bores of which are so extremely small, that the sides of the interior attract the particles of liquid, and cause them to ascend. An experimental proof of this fact may be made by immersing a glass tube, having a very small bore, into some colored water; and a practical illustration of it may be seen in all porous substances, such as sponge, bread, linen, sugar, wood, &c., all of which are formed of a collection of capillary tubes. Dip one end of either of these substances into water, and the fluid will rise in it, and wet it considerably above the surface of the water into which you dip it.

The *attraction of gravitation* is a modification of the power of attraction of cohesion; the former operates upon large bodies at immense distances, the latter upon minute particles, when in actual contact, or at extremely small distances. To comprehend the power of attraction of gravitation, is to learn a solution of the problem why all bodies, unimpeded, fall to the earth, and the true cause of the weight of matter, as well as the mysterious nature of that bond of union between the planets of our system, and indeed of all the

systems of the universe. In this more extended view, the subject may be more properly treated under the head of astronomy; we shall confine ourselves to the more circumscribed region of the earth and its contents.

The earth being the larger body, attracts every object toward its centre, and this shows clearly the reason why bodies fall, or are confined to the surface of the earth. That which we term the weight of bodies, is nothing but the operation of attraction; the power depending upon the density of the body acted upon, or rather the space which a given quantity of matter occupies. For example, a sheet of paper in its usual form will not fall to the earth in the same time, that the same quantity of paper, rolled up into a ball would. Although, in both cases, the attraction of gravitation is equal, yet the resisting power of the air operates more forcibly upon the spread sheet and impedes its downward progress. To prove that the attractive power is the same in both, place a dime and a feather in the top of a long receiver, where they can be thrown from their resting-place at the same time, and exhaust the air in the receiver by an air-pump, and it will be observed that when they are thrown off they will both reach the bottom at the same instant of time. The air being inert, cannot exert a greater force to support the weight of a cannon-ball, than it does to support the weight of a ball of the same size of leather; but the cannon-ball, having a greater quantity of matter in the same space, will be more strongly attracted than the leather ball, will consequently overcome the resistance more easily, and fall to the ground quicker. A thin slate thrown into the water, will sink to the bottom with a motion similar to that of a spread sheet of paper, in falling to the ground, while the same quantity in the form of a round stone, would sink sooner and in a straight line.

Like all other bodies, the air is subject to the laws of gravitation, but so slight is the cohesive property of its particles, that it is too elastic to fall to the earth, having the property common to all elastic bodies, of resuming its wonted dimensions after compression. The air is constantly struggling with the power of gravity which compresses it, without being able to overcome it. Gravity confines it to the regions of the globe and its elasticity prevents it from falling to the ground. The atmosphere is supposed to surround the earth to a height of about forty miles, its density increasing toward the surface of the earth, in consequence of the pressure of the upper parts. This pressure and its effects have been aptly compared to a pile of fleeces of wool, in which the lower fleeces are pressed together by the weight of those above; these lie light and loose, in proportion as they approach the uppermost fleece, which receives no external pressure, and is confined merely by the force of its own gravity.

Smoke, steam, or other vapors, though controlled by the laws of gravitation, rise upward in apparent contradiction to this truth. This is caused by the force of attraction drawing the air (which is denser than smoke, steam, &c.) to the earth, and displacing, or forcing upward, whatever is lighter than itself. This operates precisely upon the same principle as the raising of a piece of cork in a basin, when water is poured into it. The water being the heavier body, must occupy a place nearer to the earth, than the cork. Smoke and vapor rise till they reach a point where the air is of equal density with themselves, and there they remain until dissipated by some extraneous cause. The clouds are masses of vapor thus suspended in the air, and commonly vary in height from one to four miles.

It is a universal law of the attraction of gravitation, that all bodies attract each other; and the force is proportioned to the quantity of matter which bodies contain. A stone attracts the earth, as well as the earth the stone, but the earth is so much larger than the stone, that the power is not visible in the latter. The young reader may inquire, "If attraction is proportioned to the quantity of matter which bodies contain, why do not the hills attract the houses?" But this rational question is easily answered. The cohesive attraction between brick and mortar, is too strong for the comparatively weak attraction of gravity, possessed by the mountains; and beside this, the stronger attraction toward the earth's centre binds such objects too closely to the earth, to admit of their being influenced by a lateral attraction. That the mountains do attract substances floating in the air, may be proven by suspending a plumb by a line over a precipice. It will not hang perpendicularly, but will incline toward the rocks. Mountains also attract vapor, and hence it is that such sudden storms arise in mountainous districts, such as the Alps of Europe, and the Andes of South America, where the vapors are collected in large quantities, are condensed, and fall to the earth in the form of rain or snow.

PIERRE CORNEILLE.

Among the brilliant lights of French literature that shone conspicuously during the sixteenth century, the name of Pierre Corneille appears the most prominent, and may be considered in his relations to Gallic literature and the creation of a refined taste among the higher orders of the French people, in the same light as we regard Shakspeare in his relation to, and influence upon, the literary taste of the English. Although his

Pierre Corneille.

genius and talents were sufficiently vigorous and versatile to warrant the belief that he might have become eminent in every department of the republic of letters, yet his taste was decidedly dramatic, and upon his compositions of this character, his fame as a poet and a scholar chiefly rests.

Prior to the splendid reign of Louis XIV. the literature (particularly dramatic literature) of France was at a low ebb, and the stage, from which the people in a great measure derived many of their literary tastes and social peculiarities, presented a singular medley of classic purity and grave and modern buffoonery and vulgarity. No one either in tragedy or comedy had dared to depart from the Grecian model, in either the plot of the written drama, or the modus operandi of stage effect, and hence dramatic literature had scarcely a national feature to recommend it to a modern people as a picture of life, which should be the legitimate aim of the drama. Louis was a munificent patron of learning, and to him the French stage was much indebted for great improvements. It received decoration and splendor at his hands, but it was not these alone for which it was indebted to him. His munificence brought the best talents of France to its aid, and among the men of great genius that offered their services were Corneille and Racine, the Homer and Virgil of the French drama. Although they were in a great measure trammelled by existing customs, and withheld from using the infinite amount of material, out of which they were capable of building up a noble superstructure of national literature, yet they broke down numerous barriers and reared for themselves a monument of distinction, as the proudest boast of the classical age of France, and a high honor to the European republic of letters.

The taste of Corneille approximated more nearly to the romantic in his dramatic compositions, than Racine. In his *Cid* this taste is very apparent, as well as a peculiar faculty for painting to the life the character of the tyrant, the miser, the hero, the sage, or any other character of strongly-marked features. In the character of Don Gourmas, in his *Cid*, so faithfully did he portray the Spanish nobility with all their vices and their few virtues, that he received the censure of the academy, the then arbiter of French literature. It cannot be denied that tyrants and conquerors never sat to a painter of greater skill than he, in the true delineation of their character.

Corneille was the first to introduce upon the French stage that peculiar feature of the modern drama, which gives it so much value, the unity of words, sentiment, costume, and action. He first taught *mimic* Romans to dress, talk, and act, like *real* Romans, and dismissed for ever those Cesars, Ciceros, and Glauceuses, who came upon the stage appearing in dress, articulation, and action, like the generals, orators, and courtiers, that hovered around the court at Versailles. Before his time, Greeks, Romans, and Scythians, all appeared upon the stage in the full dress of the French court; and Augustus Cesar—he whom Romans venerated while living and apotheosized when dead—appeared in a full-bottomed wig with a crown of laurels over it. The reformation so nobly begun by Corneille, was fully consummated by Voltaire about a century after.

Corneille was born at Rouen, France, in 1608, and died in 1684. His works have been frequently reprinted, and consist of about thirty tragedies and comedies, beside many fugitive sketches in prose and verse. Po'keepsie Casket.

WEIGHT OF MILITARY MEN.

The following memorandum was found a number of years ago in the pocket-book of an officer of the Massachusetts line :—

August 19, 1783.

Weighed at the scales at West Point—

General Washington, . .	209 lbs.
General Lincoln, . . .	224 "
General Knox, . . .	280 "
General Huntington, . .	132 "
General Greaton, . . .	166 "
Colonel Swift, . . .	219 "
Colonel Michael Jackson, . .	252 "
Colonel Henry Jackson, . .	238 "
Lt. Col. Huntington, . .	232 "
Lt. Col. Cobb, . . .	186 "
Lt. Col. Humphreys, . .	221 "

It appears from the above, that the average weight of these eleven distinguished revolutionary officers was 214 pounds. The heaviest weight having been General Knox, who weighed 280 pounds, and the lightest General Huntington, who weighed 132 pounds. It is somewhat singular that the biographers of eminent men never, unless under circumstances of a peculiar character, record the weight or dimensions of the clay tenements which were the abodes of their immortal spirits.

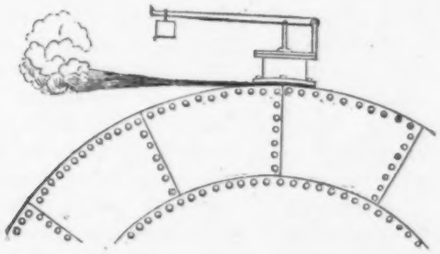
PROGRESS OF SCIENCE.

On the Electricity of a jet of Steam issuing from a Boiler. By H. G. ARMSTRONG, Esq., *in Letters to Professor Faraday.* [Communicated by Professor Faraday to the London Philosophical Magazine.]

Newcastle-upon-Tyne, Oct. 22, 1840.

A FEW days ago I was informed that a very extraordinary electrical phenomenon, connected with the efflux of steam from the safety-valve of a steam-engine boiler, had been observed at Seghill, about six miles from Newcastle. I therefore took an early opportunity of going over to that place, to investigate the truth of what I had heard, and by so doing I have ascertained the precise facts of the case, which appear to me to possess so much novelty and importance, that I deem it right to transmit the particulars to you, believing that in your hands they will prove most conducive to the advancement of science. Without farther preface, I shall proceed to narrate what I saw and heard on the spot.

There is nothing remarkable in the construction of the boiler, which is supported upon brick masonry in the usual way. The annexed sketch represents an end view of the boiler and safety valve, by which it will be seen that the valve is placed on the top of a small cylinder, having a flange round the lower end, which is fastened by bolts to the summit of the boiler, between which and the flange, a cement, composed of chalk, oil, and tow, is interposed for the purpose of making the joining steam-tight.



About three weeks ago the steam began to escape at this joining, through a fissure in the cement, and has ever since continued to issue from the aperture in a copious horizontal jet. Soon after this took place, the engine-man, having one of his hands accidentally immersed in the issuing steam, presented the other to the lever of the valve, with the view of adjusting the weight, when he was greatly surprised by the appearance of a brilliant spark, which passed between the lever and his hand, and was accompanied by a violent wrench in his arms, wholly unlike what he had ever experienced before. The same effect was repeated when he attempted to touch any part of the boiler, or any iron work connected with it, provided his other hand was exposed to the steam. He next found that while he held one hand in the jet of steam, he communicated a shock to every person whom he touched with the other, whether such person were in contact with the boiler, or merely standing on the brick-work which supports it; but that a person touching the boiler, received a much stronger shock than one who merely stood on the bricks.

These singular effects were witnessed and experienced by a great many persons, and among others by two gentlemen with whom I am personally acquainted, and who fully corroborate the above account, which I obtained from the engine-man.

The boiler had been cleaned out the day before I saw it, and a thin incrustation of calcareous matter, reaching as high as the water level, had been removed, and the consequence was, that the indications of electricity, though still existing, were very much diminished. Still, however, what remained was very extraordinary; for when I placed one hand in the jet of steam, and advanced the other within a small distance of the boiler, a distinct spark appeared, and was attended with a slight electrical shock.

From the effect produced by the cleaning of the boiler, it appears pretty obvious that the phenomenon is in a great measure, though not wholly, dependant upon the existence of an incrustation within; and the reason why such effects do not in any degree attend the effluxion of a jet of steam from a boiler in ordinary cases, must, I apprehend, be sought for in the fact, that in the present instance the steam escapes through an aperture in a non-conducting material, while in a vast majority of cases the escape must take place through a metallic orifice. Can the explosion of boilers, respecting the cause of which so much uncertainty at present exists, have any connexion with the rapid production of electricity which thus appears to accompany the generation of steam?

In the present case the incrustation in the boiler is very rapidly formed, and I therefore expect that in a few days the effects will have become as strong as they were at first. Whenever this takes place, I shall again go over to witness them; and if you wish for any farther information, I shall be glad to obtain it for you. In the meantime, you are at liberty to make any use of this letter that you think fit.

Newcastle-upon-Tyne, Oct. 14, 1840.

I yesterday revisited the boiler at Seghill, in company with some friends, and took with me such apparatus as I deemed necessary for experimenting on the electrical steam. The results of this second visit I now hasten to communicate, and you will find in the following account of my proceedings, answers to all the queries you were kind enough to send me, for the purpose of directing my attention to the proper points of inquiry.

I found the boiler, and everything connected with it, precisely in the state in which I have already described it, and on trying the steam in the same way as I did on the former occasion, the effect was very nearly the same; but when I placed myself on an insulating stool, the intensity of the sparks which passed between my hand and the boiler was greatly increased, as well as the twitching sensation in the knuckles and wrist, which accompanied the operation, and

which in my former letter I designated a slight electrical shock. In pursuance of your instructions, I had provided myself with a brass plate, having a copper wire attached to it, which terminated in a round brass knob. When this plate was held in the steam by means of an insulated handle, and the brass knob brought within about a quarter of an inch from the boiler, the number of sparks which passed in a minute was from 60 to 70, as nearly as we could count; and when the knob was advanced about a sixteenth of an inch nearer to the boiler, the stream of electricity became quite continuous. The greatest distance between the knob and the boiler, at which a spark would pass from one to the other, was fully an inch. A Florence flask, coated with brass filings on both surfaces, was charged to such a degree with the sparks from the knob as to cause a spontaneous discharge through the glass; and several robust men received a severe shock from a small Leyden jar charged by the same process. The strength of the sparks was quite as great when the knob was presented to any conductor communicating with the ground, as when it was held to the boiler. It appeared to make very little difference in what part of the jet the plate attached to the conducting wire was held; but when a thick iron wire was substituted for the plate, the effect was greatest when the wire was held very near to the orifice. The valve was loaded at the rate of 35 pounds per square inch; but the pressure of the steam fluctuated considerably, which gave me an opportunity of observing that the quantity of electricity derived from the jet increased and diminished with the pressure. The electricity of the steam was *positive;* for when the pith balls of the electrometer diverged upon an instrument connected with the steam, they were attracted by a piece of sealing-wax rubbed on woollen cloth; and when a pointed wire was held by the person on the stool, under the shade of a hat, *a pencil*, and not *a star*, of electrical light became visible.

Beside the principal jet of steam which I operated upon, there were several small streams issuing from different parts of the boiler, and in each of these the electrometer indicated the presence of electricity. From the peculiar manner in which the steam blew off from the safety-valve when the weight on the lever was lifted, it was quite impossible to try any satisfactory experiment upon the steam which was allowed to escape by that means. I applied the gold-leaf electrometer to various parts of the boiler, which, I ought to observe, is in direct communication with the ground by means of the steam-pipes, but could scarcely detect a trace of electricity in any part of it.

The engine has another boiler beside the one in question, and the two boilers lie immediately adjacent to each other. Having been informed that similar phenomena had been discovered in this second boiler, I proceeded to apply the electrometer to some small pencils of steam which were escaping in different parts, and found the same indications which I had observed under similar circumstances in the first boiler. I then raised the safety-valve, and the column of steam which escaped from it proved as highly charged with electricity as the horizontal jet which issued from the other boiler, and in which the phenomenon had first been observed.

Upon inquiry, I found that the water used in the boilers was obtained from a neighboring colliery, where it was pumped out of the mine, and that the same water was used for the boiler of a small high-pressure engine adjoining the colliery from which the water was procured. In order, therefore, to form an opinion whether or not the phenomenon in question was dependant upon the quality of the water from which the steam was generated, I proceeded to examine the steam evolved from the boiler to which I had been referred, and which proved to be a very small one. The valve was loaded with only twenty pounds on the square inch, and I learned from the engine-man that no appearance of electricity had ever been noticed in the steam. Upon trial, however, I succeeded in obtaining very distinct sparks of electricity from the column of steam which issued from the safety-valve. The sparks were certainly weaker than those obtained at the other engine, but this may reasonably be ascribed to the inferior pressure of the steam, and smaller size of the boiler.

I then repaired to another high-pressure engine, which belonged to the same establishment, and the boiler of which was supplied with *rain-water* instead of that drawn from the mine. In this case the pressure of the steam was forty pounds, on the square inch. The valve was inaccessible, but a powerful jet of steam was obtained from the upper gaugecock; I could not, however, obtain any trace of electricity in the steam from this boiler, not even sufficient sensibly to affect the gold-leaf electrometer. The presumption, then, is exceedingly strong, that the phenomenon is in some way occasioned by the peculiar nature of the water from which the steam is produced. I enclose you a specimen of the incrustation,* of a month's growth, deposited by the water from the mine in the boilers in which it is used.

I shall be glad to receive any farther instructions from you as to the proper mode of pursuing the investigation, and should be much gratified to hear your opinion as to the cause of this most curious phenomenon.†

A notorious miser, having heard a very eloquent charity-sermon, said: "This sermon proves so strongly the necessity of alms, I have almost a mind to beg."

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* The incrustation is gray and hard; it contains traces of a soluble muriate and sulphate, but consists almost entirely of sulphate of lime, with a little oxyde of iron and insoluble clayey matter, carried in probably by the water. There is hardly a trace of carbonate of lime in it.—M. F.

† The evolution of electricity by vaporization, described by Mr. Armstrong, is most likely the same as that already known to philosophers on a much smaller scale, and about which there are as yet doubts whether it is to be referred to mere evaporation, as Harris says, or to chymical action, according to others. This point it neither settles nor illustrates; but it gives us the evolution of electricity during the conversion of water into vapor, upon an enormous scale, and therefore brings us much nearer to the electric phenomena of volcanoes, water-spouts, and thunder-storms, than before.—M. F.

EDWARD LIVINGSTON.

The following sketch of the services rendered to the inhabitants of New York city during the prevalence of the yellow fever there in 1803, by the late Edward Livingston, we copy from an article in the Democratic Review, entitled "Reminiscences of Edward Livingston" :—

The citizens of New York, desiring to testify to their representative the profound sense which they entertained of the services rendered by him in congress to the cause of the people, chose Livingston, in the year 1803, the mayor of their city, though he was at the same time invested with the functions of United States district attorney, to which he had been appointed by President Jefferson. He accepted this flattering evidence of the esteem of his immediate constituents, and entered upon the office at the very moment when the yellow fever, which in those times was wont to ravage almost annually the American cities, broke out in New York with a violence unexampled in the history of that terrible disease. The dread of the contagion soon caused to disappear from the city all those whose fortune afforded them the means of flying.

The indigent class alone remained exposed to the fury of the epidemic, and this class in the United States is chiefly composed of emigrants recently arrived, who are always the most liable to the contagion. Livingston devoted himself to the performance of the duties of his municipal magistracy. He visited every day the most destitute of the sick. He conducted the physicians wherever he knew that misfortune claimed the cares and the aid which indigence could not command. "I never remember," he said to me, in talking of this great calamity, "to have experienced a greater fulness of health than at this period. There is something healthful to man in the consciousness of a duty well discharged. Notwithstanding the number of sick whom I saw every day, my recollection of their sufferings, of their distress, of the interest attaching to their families, to their various relations, did not present itself to my mind only in the mass; I know each one individually. I identified myself with each one of the sick, for I could call each, with the physician, *my patient*. I shared in the regrets of the family of each victim, the joy of the wife, the children, of each convalescent restored to life, to labor, to the tenderness of family affections. After the first tears of the contagion were surmounted, I ceased to experience the slightest apprehension of danger. My confidence was not fatalism (my soul has always regarded with horror that cruel slavery of man to necessity), but a profound sense of the task of humanity which Providence had assigned me. It was the unfavorable turn of an alternative contract (to speak the language of the law) which I had signed, in accepting the chief magistracy of a great city, then populous and flourishing. This contract must be executed in its letter and in its spirit."

Livingston loved to retrace this epoch in his life; and he used to return to it as frequently as to the days of his childhood. He felt that he had fought there for his country with not less patriotism and devotion, than under the walls of New Orleans in 1814–'15. "I often used to meet, especially in the obscure retreats where were piled together the Irish emigrants, a catholic priest"—(Livingston gave his name, but my imperfect memory for names has not retained this venerated name)—"always at prayer by the bedside of the unfortunate. There was something of the apostle in the simplicity of this virtuous ecclesiastic, something of the missionary of Breda in the eloquence of his exhortations, and oftener the mild and persuasive sweetness of Fenelon in his improvisations of prayer. I felt then that, in the celibacy of the catholic clergy, it is not all peril and danger on the part of the individual, and policy and ambition on the part of Rome. The married priest has not that devotion, that sublime self-denial, of the unmarried. It is but natural. To ask the father of a family to go and impregnate himself with contagious and fatal miasmata by the bedside of the sick, to scatter the germes of death among his wife and children, is asking human weakness what it cannot every day grant. That species of heroism man may command for his single self, but it is not permitted to have it for one's self when it endangers the existence of those who are intrusted to our care, and from whom we cannot exact a doctrine which the sense of a moral obligation does not awaken in their hearts as in ours."

In confirmation of this opinion which he had formed of the relative positions of the catholic priest and the protestant minister, Livingston related to me the following anecdote: "The violence of epidemic was beginning to abate; its attacks were indeed not less numerous than before, but the proportion of its victims was daily diminishing. I had a few minutes at my own disposal, and I had gone one evening, in a carriage, a short distance from the city, to breathe the pure air of the country, when I met on the road, at the very moment when I was about to return toward the city, a protestant minister—married, and the father of a numerous family. He, like the rest, had fled the fatal contagion. He was a man truly pious, of exemplary life, and presenting in his own person to his flock an example of the Christian virtues which he preached to them with sincerity and eloquence. And yet, in the hour of danger, he had not remained, like the old soldier of the spiritual legions of the new Rome, firm to the post where his chiefs had stationed him. He had fled before the danger—not for himself—he had been carried away by the panic with which his family had been seized. 'What is going on in town, Edward? Is the sickness abating?'—'We are doing all we can, my reverend friend. We are taking care of the sick. The physicians are discharging most nobly their glorious mission—but what can we do for men's souls? The proper material succors abound, for never was charity more lavish of its offerings; but the bread of The Word is wanting. The wretched ask in vain for those physicians of the mind diseased, whose consolations can cure the wounds of the spirit and rob death of its ter-

rors. Well—what do you say? Here is room for you in my carriage. Come in—the ripe harvest is falling to the ground, and there are no reapers to gather it.' My friend pressed my hand—pointed to me his wife and children at the door of a small house near the road—and walked away in silence!"

Livingston was always happy to render a signal justice to the greater number of the municipal officers, his colleagues. He did not say, himself, what the whole city proclaimed, that it was his zeal that had inspirited the faithful, strengthened the weak, redoubled the zeal of the most courageous. I remember our having been both invited, many years after this great calamity, to dinner, at the house of a rich baker, of Scotch origin, who used every year to give a grand entertainment to all his friends. Every one was surprised to see the worthy citizen rise, fill his glass, and announce that he was about to give a toast. His attitude indicated the intention of making a speech, and, as the worthy Mr. L—— did not pass for much of an orator, the result of this unaccustomed attempt, on his part, was awaited with some uneasiness. "Gentlemen," he said, with an agitated voice, "I give the health of Edward Livingston, mayor of New York, at the period, when this city was ravaged by the yellow fever—the health of the man who then saved my life! You do not remember it, my friend, but I—I have never forgotten it. Poor, with no prospects of fortune in my native country, I had come to seek it in the United States. Two days after my arrival at New York, I felt the attack of the terrible pestilence which was then decimating its population. I scarcely knew what occurred after I had been transported to one of the hospitals, where the destitute sick were received. But I remember, on recovering my senses, experiencing so keen a cold—(it was in the beginning of November)—that the life which had before flowed in full current through my veins seemed now to suspend its course—when I saw you enter, you, my preserver! You were accompanied by several men, bending beneath the burden of bundles of blankets. You came yourself to me—you spread two of these blankets on my bed—you took care that all my limbs were well enclosed in the covering. I felt myself revive. The favorable crisis of the disease was relieved from all obstacle to its work of health. The next day, Madeira wine, nourishing food—all brought by you, my friend—soon restored me to health and strength. Gentlemen, all the sick who did not receive warm blankets, to protect them from that first cold, were dead the following morning. That *next day*, is the day whose anniversary I celebrate every year, with a heart overflowing with gratitude to God, and to you, Mr. Mayor—(I will still style you thus)—who were to me the instrument of the divine protection."

One must have seen for himself all the movement and activity that prevail in a great commercial city in America, to appreciate the spectacle which New York then presented to the eye which had beheld it in the days of its prosperity in the early period of its vigorous adolescence, when it was springing forward with the ardor of youth, toward that opulence, that immense commerce, that indefatigable eagerness of enterprise, of which it had already the presentiment, and which destiny was already preparing for it; to appreciate the mournful gloom of those empty streets—those houses left open and fully furnished, from which the owners had fled—that forest of shipping, forest deserted and silent as those of the western wilds. On the masts of some of these vessels hung still the unfurled sail. The seamen, who had brought them to their port, through the dangers of every ocean—fearless, equally under the fire of the British battery, and in the midst of the tempest—had felt their courage fail them, in meeting, face to face, upon these wharves, that ghastly phantom, whose very name makes the child of the sea to tremble, *the yellow fever!* All had fled to the country. Even the instinct of the sailor, that instinct which attaches him to the seashore, as the Highlander to his hills, ceased to have any effect on them—they had plunged far into the interior of the country. You traversed the length of whole streets without meeting a single individual. On the wharves might often be seen the bales of merchandise which terror had left there. There was no danger of their being carried off; no such objects had any value to those who were, at every instant, playing for the stake of life, with the dice which death had loaded. There were not to be seen, during that dreadful calamity, as at Florence or Marseilles at the time when the plague was desolating those great cities, bands of robbers, adding to the horrors of the pestilence the hideous spectacle of guilty cupidity. The deserted houses were not invaded; everything remained as it had been left by the fugitive owner. The physician, the nurse, alone entered the houses, and nothing was carried from them but the bodies of the dead.

Livingston kept the list of the houses in which the sick lay. Every day he made the round of them with an indefatigable exactness. The courage of the physicians displayed itself on this occasion as it has since displayed itself in Europe, during the ravage of the new scourge which has arisen within our days, as though to mow down with a more terrible energy the generations which the yellow fever had spared for twenty years—animated with that noble bravery which silences the instinct of self-preservation in competition with the execution of their sacred ministry. The municipal treasury was exhausted. Livingston gave all his fortune. He did more—he gave his future, by contracting debts which bound him to long and arduous toil for their discharge. His patrimonial fortune, his house, his equipages, his lands, whose increasing value promised him soon a fortune commensurate with the prodigal generosity of his heart—his books even, those masters of his youth, those friends of his maturity, those silent monitors from whom he had learned everything, even to sacrifice them themselves to humanity, to duty, to honor—all was sacrificed, without a regret beyond the very moment of the loss.

This last expression demands an explanation. I have never known any person who carried to

the same degree with Livingston that kind of philosophy which consists in deciding promptly and energetically for the future after a loss, a disappointment, or a mishap of whatever nature. He called into play all the strength, the resources, the energy of his powerful understanding to ward off the event; but if in spite of all the misfortune arrived the event once encountered, no more vain regrets, no more idle recurrence to the past, no more frivolous conjectures of the means which might have led to a better result. He drew a veil over the past, and then sprang forward toward the future, with a bound the more vigorous, aspirations the more ardent. He commenced the rebuilding of the edifice of a new fortune with the industry of the bee driven from its task. I say, fortune—he wanted one, not for himself—what did he want, he, with the childlike simplicity of his tastes, and purity of his spirit? A book—(and sometimes some work of imagination was sufficient for him to amuse his thoughts)—the society of a friend, with whom he could talk or be silent according to his mood of the moment, whom he could leave or rejoin—trees to plant—earth to dig—ingenious machinery to construct—(he had a genius for the mechanical sciences, a genius which Brunel, with whom he had been intimate in his youth, had perhaps contributed to develop)—a child to play with—or when his mind after repose required to resume its high struggle with subjects suitable to keep in activity its energetic vigor, profound meditations on society, on the laws that govern it—to interrogate the legislation of nations that are dead, after the manner of Montesquieu—to probe all the wounds of nations that are living but diseased, with the patient and minute investigation of Bentham. I have said that he had given his inheritance food to the yellow fever—that he wished for a fortune—he wished it, but for his children's sake, whom he reproached himself for having deprived of that which he had already made for them, and which he had just lost—he wished it, to enjoy at his ease that leisure which he would devote to science, to art, to letters, to friendship, to the affections of the heart.

The means of acquiring this fortune in a few years, he thought he saw in a great event which had just distinguished the presidency of Thomas Jefferson. I mean the cession of Louisiana to the United States, by a treaty which a brother of his, Chancellor Livingston and Mr. James Monroe had recently signed with Barbé Marbois, plenipotentiary on the part of France.

The history of this treaty has been written by Barbé Marbois with so much truth and impartiality, that it would be difficult for me to add anything to the narrative of that memorable negotiation, notwithstanding all the details I have gathered from the lips of Livingston himself, who had in his hands all his brother's manuscripts. Livingston determined, after making an exact review of the condition of his affairs, to establish his residence in New Orleans. He saw that that rich province, vivified by commerce and industry, would make rapid advances in wealth and importance. His knowledge of the French language, the only one then spoken in Louisiana, and of the Spanish, in which had been written all the public acts passed for forty years, and the profound study to which he had devoted himself of the Roman law, and of the French and Spanish systems of jurisprudence, both sprung from the Code of Justinian, offered him great advantages in the practice of his profession in the new territory, whose inhabitants were not, however, strangers to his reputation as a statesman and jurist.

The epidemic was near its close, when Livingston was himself attacked by it. "It was then," he often repeated to me, "that I received the reward of what I had done for the people. As soon as it was known that I was in danger, the street in which my house was situated was blocked by the crowd, who pressed even to my chamber to receive intelligence of my condition. The young people took turns hour by hour, in the care of watching by my bed of suffering. The crisis was violent, but of short continuance. A good constitution, and a mind composed, and rather inclined by nature to hope than to fear, which, if it did not aid the vital principle, at least left it undisturbed in the effort it always makes to repel disease, triumphed together over the alarming symptoms which the physicians had announced as the precursors of death. Soon convalescent, the doctors, nearly all at that day disciples of Brown, declared that they would not answer for a relapse, if some very old Madeira could not be procured for me. My cellars were as empty as my purse. But as soon as it was known in town that I wanted some good wine, from every direction I saw arrive the best wines I have ever tasted. No, my friend, the people is not ungrateful. Do not receive as an established fact that old maxim set afloat by aristocracy. It is, on the contrary, profoundly grateful, not only toward those who render it glorious and memorable services, but equally toward those who, like me, have done no more than to fulfil faithfully the trust that has been confided to them. The gratitude of the American people, has it not followed Washington from camp and council into the retirement of private life? and what voice was raised to contradict Lee, when, in announcing his death to congress, he styled him 'the first in war, first in peace, first in the hearts of his countrymen!' What patriot of our country has descended to the tomb, without being followed there by the homage and regrets of the nation? And were forty years of absence able to efface from the American heart the memory of the services of la Fayette?"

IMPROVEMENTS.

Professor Mason, in his oration before the American Institute, in October last, made the following remarks in reference to the moral and religious influence of improvements in Agriculture, Manufactures, and Commerce:—

The history of nations, but especially of free nations, tells us that all the interests of society

must suffer, where morals are corrupted and religion is dishonored. It would ill become us to rejoice in any prosperity which is unfriendly to these vital interests of mankind. The shades of our ancestors would rebuke us; and the curse of posterity would fall on our graves. And I approach this topic, aware of the responsibility it involves.

Immorality and impiety may attach themselves to a very high or to a very low state of civilization. No reliance is to be placed, for moral and religious ends, on any, but the obvious and appropriate means. And all I propose to show, is, that the improvements, which we are considering, are friendly to the moral and religious improvement of the people.

That the manners of society are cherished, purified, and elevated by these improvements, will scarcely be questioned. Where all things tend toward an equality of condition, and no class is independent of other classes, we are in little danger from that false refinement of manners, which appears in aristocratic countries. All that we gain in manners is substantial gain. And whatever cultivates a taste for the beautiful, or softens the social affections, or increases the facilities for generous actions, or brings us to the knowledge of good letters, goes directly to the account of good manners.

But the manners of society are intimately allied to its morals. "Vice," said Sir Edmund Burke, "loses half its evil by losing all its grossness." Good manners are a discipline of the understanding and the heart; and they restrain unnumbered acts and tendencies of immorality, which would prevail in a lower state of civilization. The equality of condition among our citizens, subjects every man to the observation, and every vicious man to the animadversion, of his neighbors; and thus the state of our manners operates as a powerful restraint on immorality. No man among us, except in the solitude of a great city, can openly violate the decorums of life, and avoid feeling the indignation of society. In the judgment of enlightened foreigners, our institutions and our condition are highly favorable to good morals.

The opportunity which every man enjoys to improve his condition, naturally disposes him to be a moral man. The laborer, who has laid up the wages of a single month, has something at stake on the institutions of the country. He begins to value his citizenship, and takes an interest in the public welfare. His self-respect grows with all his savings. Self-respect induces a respect for the opinions of other men. And he who at first assumes a virtue for the sake of appearances to others, may learn to practise that virtue for the satisfaction it yields. And I think it will be found, that where the physical condition of society has been most improved, and its intellectual character most advanced, there the morals of the people have been cherished. But show me the little village where they are content with a low condition, where they neglect the improved methods of labor, and where they prefer idleness to prosperity; and there it will be found, that they prefer the grog-shop to the schoolhouse, and the justice's court to the sanctuary.

But the morality of a people has an intimate connexion with their respect for pure religion. The morality of a people will never be more exalted than their religious opinions and sentiments; and religion and morality are favored by whatever favors intellectual elevation.

It is a remarkable fact, that nearly all the nations on earth, who worship the one living and true God, are men of the Caucassian race, the race as much distinguished from all others by intellectual superiority and practical wisdom, as by the development of their brain and the color of their skin. And this race inhabit chiefly within the latitudes of Quebec and New Orleans on both sides of the globe.

In all true science, that is, in all true knowledge of the nature of things, their qualities, their changes, and their relations, we approximate toward the Maker of all things. It is the wisdom of a man to search out a matter. When Barrow was asked why he left the pulpit for the chair of mathematics in the University, he answered, "God is a geometer."

Imperfections and mistakes in physical science have been a fruitful source of popular infidelity. The whole skeptical system of Monboddo was founded on the supposition that man, by a series of fortunate changes, has gradually risen from the race of brute animals; a supposition which Cuvier has demonstrated to be erroneous. For that greatest of comparative anatomists has proved beyond a doubt, that no living thing on earth ever passes from one distinct class to another; but each continues after its own kind.

The discoveries and observations in physical science have exploded numerous forms of popular infidelity. Physical science has, in modern times, been successfully applied to illustrate the being and attributes of the Deity. Tucker, in his "Light of Nature," laidthe foundation on which Paley and Chalmers have built up the still growing science of natural theology. And when the whole system of nature shall be searched out, and physical science rendered complete, the harmony of natural and revealed religion will be established; and infidelity will find no resting-place but in the closets of the doubting metaphysicians. There it will be nearly harmless, because the common people will never understand its language.

While, therefore, the secrets of science are laid open to the farmer, the mechanic, and the merchant, in the improvements we enjoy, truth has a more easy access to the mind, and the truth of religion comes home to the business and the bosoms of men, as being a practical good, profitably for the life that now is, as well as for that which is to come. I have yet to learn, that prosperity depending on regular and enlightened industry, is in any way unfriendly to the sentiments or the belief of religion.

The discussion of this topic cannot now be prolonged. But I love to consult the auspices of our country, and collect the indications of her future career. I love to forecast the stability of her institutions, the magnitude of her resources,

and the growing happiness of her swelling population. I love to rekindle in my own breast, the sacred fire of patriotism, and cherish its glowing anticipations. I love to dispel those fears, which accidental causes have awakened in minds, prone to extremes, and discouraged by passing misfortunes. Are you not weary of the croakings suggested by fluctuations in commerce, which were brought on by the excesses of paper money, and of foreign importations? Is the republic therefore to be despaired of? Trade and commerce will ever be liable to fluctuations; but each successive wave will be smaller than the last. When a bubble of illegitimate trade has been inflated beyond its capacity and bursts, the mischief is great, but temporary; business gradually revives, but revives in new forms, under smaller profits, and closer competition; requiring increased caution, sagacity, and industry; and, to a large extent, it revives in new hands. The unfortunate look for its return in the old channels, and they often look in vain. But nature, constant to her own laws, suffers no fluctuations. Seed-time and harvest return in their due course. The earth teems with abundance. Greater numbers apply themselves to agriculture. Richer harvests wave over the fields. The productions of the earth call forth again the enterprise of the mechanic, and reward his labors. The growing wealth of the country calls again for the labors of the merchant; and again his prudent and sagacious industry gives him a moderate and safe accumulation of wealth.

These revolutions in business are incidental to our country. They result from the proudest features of our institutions, and our character—from our freedom in action, our vigor in enterprise, and our easy confidence in each other. They are the excessive pulsations of a growing and youthful body; and they give promise of a gigantic maturity. Experience will render them less frequent, and less injurious while they last; but all that is valuable in the highest idea of home and of country will be left. Each new convulsion will teach us new lessons of political economy; will throw us back on the sources of wealth within our own country; and will teach us to cultivate the soil more perfectly, and to bring into use the geological and mineral resources of our own mountains and valleys.

These pursuits will employ the science of the learned, the skill of the ingenious, the labor of the diligent, and the capital of the enterprising. These must ever be the sources of our national wealth. The products of these pursuits must determine the measure of our commerce; for our surplus production is all we can give in exchange for the productions of other countries. A wise regard to these pursuits must indicate the true course of our government for the protection and encouragement of American ingenuity and industry. And it will be glory enough for any people to preserve the institutions of our fathers, to develop the resources of our country, and to render it what it is destined to become, unless our want of virtue and patriotism shall prevent.

When I reflect on the probable destiny of and country, my imagination can scarcely grasp the results of sober calculation. Our territory extends across the continent, and through every degree of latitude adapted to a high civilization. Our soil is adapted to every production except a few articles of luxury and ornament; and is capable of supporting a population greater than all Europe. We have iron, copper, lead, coal, marble, and granite, sufficient for the world, and easy of access. These sources of wealth are coming to light along with the improvements in their adaptation to the use of man. Every successive fair of the American Institute exhibits a new collection of labor-saving machines, to which coal and iron can apply the power of steam, and make them our untiring, undying servants.

These servants are cheaply fed, and wear no clothing; they have no period of infancy, or old age, to be provided for; they raise no mutinies; and they obey without the lash. We have not yet learned how many of these servants may be directed by one skilful hand. But allowing the progress of improvement to continue what it has been, during the last forty years, it is quite safe to predict, that before the population of this country shall reach fifty millions, the machinery of the country will be equal to the labor of five hundred millions. In other words, the productive industry of the country will be equal to the undivided labor of a population ten times as great as that to be provided for. The men are now living, who will see these grand results. The children are born, who will see the double of these results. And how will this vast accumulation of wealth be applied?

This is a question of vital interest. But the nature of the case suggests the answer which philanthrophy desires to hear.

The intellectual and moral character of the people is to be sustained and advanced. The accumulation of wealth is to be made by the people, and remain in their hands. It will not be collected by hundreds of slaves for the luxury and pride of one master; nor by hundreds of serfs for one lord; nor by thousands of subjects, to be lavished on the pomps and vices of royality; but the common wealth will be advanced. The industrious and virtuous of the people at large, will be better housed, better clothed, better fed, and better learned. The log cabin will give way to the tasteful and commodious dwelling. The deep forest will become a fruitful field. The desert will blossom as the rose. And I doubt not that humanity will be cherished, while learning and religion will be patronized.

I am aware that on these points, there are many fears indulged concerning the future growth of our country. De Tocqueville has suggested the fear that manufactures may become concentrated in a few hands, and thus lead to a new form of aristocracy, which will oppress the laboring class by reducing wages, and preventing education. But he takes no notice of the fact, that so long as good lands are cheap, and cultivation easy, honorable, and profitable, it will not be possible to command the labor of men at low prices. Nor has it yet appeared, that great manufactories have a tendency to restrain education. The schools at Lowell, and the other great manufacturing dis-

tricts of New England, are of a higher order than the common schools of the rural districts; and these schools are more uniformly attended than the common schools. Experience has proved that it is cheaper to have schools and churches, than to live without them. In the manufactories of Rhode Island, there is certainly a higher state of education, than among the farmers of the same state. The proprietors of these great establishments, to my knowledge, are the careful patrons of education and morals. They act on the principle, that it costs less to prevent vice, than to restrain it. The white steeple of the church, is the first object that meets the eye of the traveller in his approach to a manufacturing village. To me, it seems obvious, that the danger apprehended cannot come upon us, until the constitution is abolished, and the foundations of democracy are broken up.

But will not religion, science, literature, and the fine arts, languish for want of patronage and support? This result is feared, and the fear is often expressed. An anxious concern on this subject is felt in our behalf on the other side of the ocean, especially by the church-and-state party in Great Britain. But what is the ground of this fear? I have listened to all its suggestions and ill-bodings, and they may all be resolved into one short sentence—the people cannot be trusted. Well, if this is true, then the republic is to be despaired of; and our experiment of a free government, is to be a failure. But this is a denial of the very first article in our political creed. And who of us is prepared to make this denial? If any, let him renounce his birth-right; and let him retire and pray to Jupiter to send us down some log from the tree of legitimate sovereignty. True republicans are not prepared for this denial. The people can be trusted with the elective franchise; they can be trusted for the support of religion, and the encouragement of science, letters, and the arts.

The founders of our government made a novel experiment, when they left out of their plan any provision for the establishment and support of religion. They left this matter to the choice of the people. Thus far, our experience commends the wisdom of the plan: the people can be trusted; religion has gained power by gaining her liberty.

Religion must be perfectly spontaneous, or it is not worthy of the name. Religion is not the production of priests, or philosophers, or rulers; but pure religion produced both the priest, and the worshipper, by commending its own truth and goodness to the conscience of both. And it depends for its support on the conscience of civilized, enlightened man; there, it can trust securely; and if it could not, I should be almost persuaded to be an infidel. The history and the present state of our country give clear proof that the people of these United States are, and will be, the supporters of religion. I venture to assert, that according to our numbers, and our wealth, the people of the northen and middle states have expended more money on religious institutions in the last fifty years, than any other people on the globe.

And now in regard to the patronage of science, letters, and arts. Cannot the people understand the value of these things? Are they not daily tracing the improvements of the plough, the saw, the mill, the lathe, the steam-engine, and all their labor-saving machines, back to the principles of pure science? Are they not pleased with the grand and the beautiful in art? Are not more copies of the best literature of England sold in American than in old England herself?

The prospering class of men are ever disposed to be bountiful toward science and art. This truth is a proverb in all the world; but it applies with double force in a country where there is no hereditary wealth; where there is no place or use for princely fortunes, and where no man can find distinction so surely as by patronising the institutions of learning.

The patronage of kings and nobles bestows on science and art only a small part of what has first been taken from the people, while the people have no share in the honor. With us, the people who give, consider the institutions of science and art as their own. And this feeling of ownership, in the minds of the people, gives a sure pledge, that their own will not languish or be despised.

When Stephen Girard looked around him for a monument, he chose not the stately column, nor the tomb of mausolus; but he founded and endowed a college, where his memory will be for ever cherished in the hearts of orphans, and of dying widows, who leave their sons behind them. May we not look for similar benefactors among the men who are now making overgrown fortunes in our country?

But we are not left to conjecture as to what will be done for science, art, and letters, by the citizens of this republic. They have been acting on this subject, and acting with zeal and munificence.

Let those who consider us wanting in this matter, remember that we are laying new foundations; that we are building for posterity. Where a few years ago stood a forest or a sandbank, are now reared the lofty walls of academies, lyceums, colleges, libraries, and universities. These buildings are alike ornamental as specimens of architecture, and honorable to the forecast of their bold projectors. They indicate that we expect to be a great, and prosperous, and happy people.

Description of a good wife.—She hadn't no *ear for music*, Sam, but she had a capital *eye for dirt*, and for poor folks, that 's much better. No one never seed as much dirt in my house as a fly couldn't brush off with his wings. Boston gals may boast of their spinnets and the *gytar*, and their *eyetalian* airs, and their *ears for music*, but give me the gal I say that has an eye for dirt, for she is the gal for my money.

There is philosophy which is benumbing, deadening, in its influence; it delivers the soul by rendering it insensible, not by imparting a new principle of vitality beyond the reach of earthly ill.

THE WOMEN OF INDIA AND CHINA.

VIEWED with the eye of strict justice, the threatened, and perhaps already accomplished invasion of China by the British, certainly appears unjust, especially when we understand clearly the real causes which have conspired to awaken the ire of Britain. But however unjust and untenable the ground may be, upon which England bases her right to take up arms against the celestials, there can be no doubt but the result, if it be a revolution of the Chinese government and a breaking down of the impregnable barriers which their laws of exclusiveness have reared, will be of great and incalculable benefit, not only to the Chinese themselves, but to the world. The religious and social condition of that benighted people will be changed, and those laws of government and of custom which for centuries have been as unalterable as those of the Medes and Persians, and which have held the intellect in bondage, made the condition of females degraded, and spurned every attempt at improvement of any kind, will be subverted, or so modified as to enlarge the sphere of action of every aspiration of the human soul.

The following sketch of the present condition of the Chinese females, is from Lady Morgan's "Woman and her Master." Who, on reading this, will not long to see the period when woman, "Heaven's best gift to man," shall be lifted up from that degraded state in which she is enslaved by custom, in the eastern world?

It is an awful and heart-rending act to raise the dark curtain which hangs before "the sanctuary of the women," throughout the great continent of Asia, and to penetrate the domestic holds of those vain-glorious nations, which arrogate to themselves the precedence in creation, and date their power and their policy from eras, anterior to the written records of more civilized communities. In these states, on whose condition the passage of some thousands of years has impressed no change, and in which the sufferings of one half the species have awakened sympathy, may be discovered the most graphic illustrations of the tyranny of man, and of the degradation of woman. There, the sexes, in their mutual relations, are still where their earliest necessities placed them; perpetuating, by their false position, the barbarous rudiments of primeval society. The sin of polygamy, still unredeemed in the East, dries up the fountain of human sensibility; and crushes every better impulse of feeling—annihilating even the hope of political liberty, and leaving the wisest legislative reformer at best but a happy accident, if not an anomaly and discord. In the Zenana of the modern Hindoo, woman is still the slave of the most frightful superstition, the victim of the most selfish institutes which man has ever yet devised. Frail, her infidelity to her lord is punished by a living burial; faithful, her constancy is rewarded by a place on his funeral pyre; her life and death alike a violence to nature, an outrage to society, and a mortifying evidence of the incapacity of some races for improvement and reform. In the Persian harem, and the Turkish serai, the story of the victims devoted on the altar of man's sensuality is briefly and bitterly told: ignorance, corruption, incarceration, infants murdered, mothers maddened; for the unfaithful, the sack, the bowstring, or the tower; for the true, satiety, neglect, and untimely death. For this existence of pains, and penalties, and privations, what are the compensations? a toy, a flower, a sweetmeat, and, above all, a smile from those lips which might pronounce death to the dearest, or extinction of sight to the brightest. But there is a pompous and a pedantic land which boasts supremacy in wisdom and in science from an epoch anterior to all human record save its own—China, the land of many letters, or many lanterns, and few ideas. Peopled by the long-eared, elliptic-eyed, flat-nosed, olive-colored Mongolian race, it offers a population singularly deficient in intellectual physiognomy; though, for its absurd ugliness, the women of the higher classes occasionally offer exceptions. In China, polygamy prevails virtually, if not by name, and the sovereign, self-imprisoned in his golden-roofed palace, with his one emperess, six queens, and three hundred (or, if he please, three thousand) concubines, reflects on the great scale, the domestic establishment of those among his subjects, whose wealth may permit the irrational indulgence of their passion or their pride. The female slave who, at the head of a band of inferior slaves, is dignified with the name of superior (adequate to that of wife), who has been purchased with gold, and may be returned, if on trial not approved, is not deemed worthy to eat at her master's table. Crippled from her cradle, morally and physically, ignorant of any one of the many thousand letters of her husband's alphabet, referred to the futile amusements of infancy for all resources against utter tedium, to dress and to smoke are her highest pleasures; and to totter on the flat roof of her golden cage her sole privilege. She too, feeble and imbecile as she is, is outraged in the only feeling that nature may have rescued from the wreck of man's oppression; for the Chinese wife, like the odalisque of Turkey, yields up her offspring a sacrifice to the murderous policy of her master.

If such is the destiny of the lady of the celestial empire, the woman of the middle and lower classes submits to a yet severer fate. She it is who feeds and rears the silkworm, with an attention of details to which the female organization is so pre-eminently capable; she reels the produce, and works and weaves the silk. It is the woman, too, who cultivates the most tender tea-plants, and whose delicate fingers are alone fitted to roll the finer tea-leaf; having thus furnished her quota to the common means of national wealth, she also works that exquisite gold and silver filagree, and prepares those gorgeous ornaments, in which imperial vanity delights to adorn the ponderous and puerile divine-righted ruler of the celestial empire. Descending yet lower in the social chain, the female peasant of China presents a still more extraordinary exam-

ple of plodding industry. Exposed to the inclemency of the seasons, with the infant tied to her back, which she may have rescued from the wild beast, or from the devouring wave, she ploughs, sows, reaps, and performs the thousand offices of toil and drudgery attached to the cultivation of the soil, from which she derives so little benefit and enjoyment. Denied, too, all moral rights, she incurs, nevertheless, a fatal responsibility for her husband's delinquencies; and suffers death with him as his dependant, for crimes in which she could have no moral participation. The natural death of her husband gives her over to the family, who, to recover the money expended in her purchase, may resell her to the highest bidder; while her own is very frequently her own handywork. Suicide, it is asserted, is of frequent occurrence among the Chinese females of the lowest classes; and well may they see death, to whom, from the cradle to the tomb, life holds forth not one solitary good. Other eastern states, less policized, or less self-important, exhibit fearful examples of the dire results of polygamy, its outrage and degradation toward one half of the species, its brutalizing reaction on the other. Still, through ages of suffering and injustice, the numbing influence of custom, which for ever confounds establishment with fitness, did not so extinguish the sense of right in its victims, but that some vague traditionary dogma was required to justify the institutes perpetuated by the master against his servant. If the Hindoo woman, all palpitating with life and feeling, was buried or burnt alive at her husband's will, a page was quoted from the ancient story of the nation, denouncing some cunning combination among the women to escape from the dominion of the strongest, by the murder of their husbands, which necessitated the merging of the woman's existence in that of her lord. If the Chinese crushed the feet, and paralysed the intellects of their women, the practice was traced back to some supposed time, when the females, left free to walk and to act, had conspired against the eternal government of the celestial empire, and sought to establish a female supremacy. Either as fact, or as a mythological fable, the notion of some attempt on the part of women to escape from thraldom, through the exercise of her subtle and insinuating faculties, and to found a forbidden empire on a superiority of knowledge, seems to have prevailed throughout the East from the earliest times; amounting to an admission of the wrongs inflicted upon the sex, and to an acknowledgment in it of inherent faculties and powers, only to be counteracted by such coarse and brutal expedients as have been so generally applied to them.

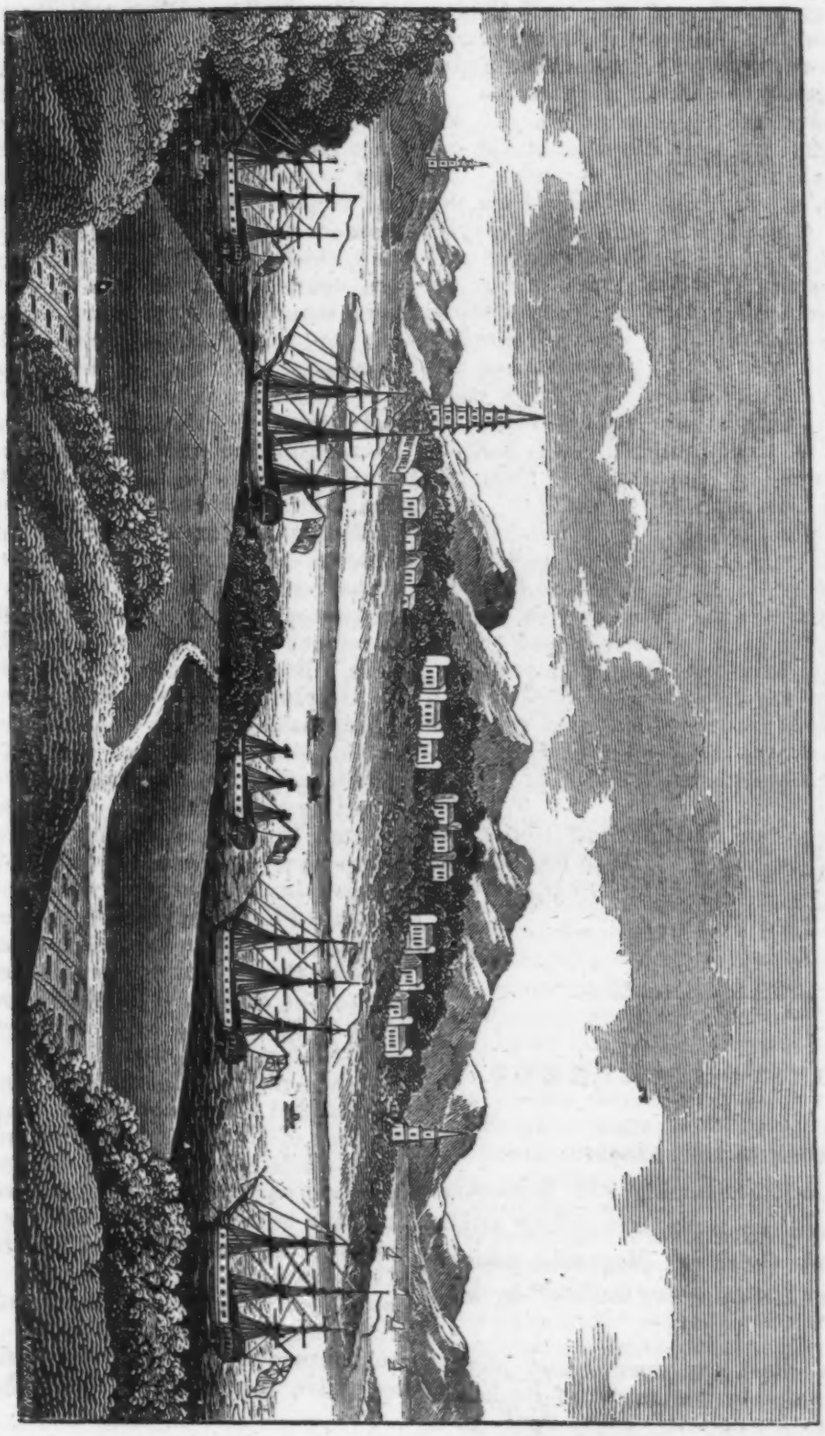
POLITENESS.

In our intercourse with the world this species of civility is imperative. We possess no right to give offence, by language or actions, to others, and we are bound to conduct ourselves agreeably to the reasonable and set rules of society. Some severe writers on morals have confounded politeness and insincerity. They seem to imagine that the act of speaking gracefully to another, is necessarily mere grimace, or an empty flourish signifying nothing. In many instances with insincere people, this may be the case, but it is not so with those of well-regulated minds. It is always better to speak politely, that is with propriety and delicacy, than bluntly, coarsely, or impertinently. Civilized society has, in the course of time, instituted certain rules in the code of politeness, which, though of little actual value, it is every one's duty to learn, because by knowing and acting upon them, we can make life glide on much more smoothly and pleasantly than if we remained in ignorance of them.

It is incumbent on every one to be courteous or respectful in his intercourse with neighbors, acquaintances, or with the public generally. To inferiors, speak kindly and considerately, so as to relieve them from any feeling of being beneath you in circumstances; to equals, be plain and unaffected in manner; and to superiors, show becoming respect, without, however, descending to subserviency or meanness. In short, act a manly, courteous, and inoffensive part in all the situations in life in which you may be placed. Society has ordained certain modes of address, and certain exterior signs of respectfulness, which it behooves us to support and personally attend to. By attention to the rules such as we have alluded to, the poorest man will be entitled to the character of a gentleman, and by inattention to them the most wealthy individual will be essentially vulgar. Vulgarity signifies coarseness or indelicacy of manner, and is not necessarily associated with poverty or lowliness of condition. Thus an operative artisan may be a gentleman, and worthy of our particular esteem; while an opulent merchant may be only a vulgar clown, with whom it is impossible to be on terms of friendly intercourse. We say, cultivate politeness of manner, by all means, for it is refined civility, and will spare both ourselves and others much unnecessary pain.

HEBREW WOMEN.

Wherever the women of Hebrews are to be found (and where are they not?) they still exhibit the type of that intellectual beauty which subdued Egypt, and reformed the penal statutes of Persia, and their fine heads are cited by science as models of the highest moral conformation. Bright thoughts flash from their bright eyes, quick perceptions animate their noble lineaments, and if the force of circumstances is no longer directed to elicit the high qualities of an Esther or a Judah, the original of the picture drawn by the prophet king of the virtuous woman "whose price is above rubies," may be found among the Jewish women of modern as of ancient times, for "they eat not the bread of idleness," and the hearts of their husbands trust them.



Ship Anchorage at Whampoa.

This engraving gives a correct view of the island of Whampoa, lying in the Pearl river, about twelve miles east from Canton, in China. At this place the foreign vessels all anchor, and their loading is taken ont by boats and carried to Canton, and their return cargo brought down. Here the Bethel flag is displayed (as is seen in the cut), and the meeting for seamen held on shipboard. At the bottom of the cut is represented a part of Dane's island, which is a small rocky hill, where sailors are buried who die at this port. The price for burial ground here is sixteen dollars, and ten more for permission to erect a grave-stone.

West from Dane's island, at the lefthand corner of the cut, is represented a part of French island, on which are the tombs of many foreigners, residents, and captains. The price of land here is very high.

Whampoa island is long and narrow. The anchorage extends two or three miles in length; the American vessels generally occupying the higher births, and the English the lower. The river varies from fifty to one hundred rods wide, and from three to six fathoms deep. The tide rises from three to eight feet. The village on Whampoa island contains several thousand inhabitants.

At the west end of this island is a petty customhouse, or guardhouse, where all Chinese boats, having anything to do with foreigners, are obliged to stop and obtain a permit, called a *chop*, and the house is hence called a *chophouse*.

Three pagodas are represented on the cut. That on the left hand near the edge of the cut, the top of which only is visible, is called, "the half-way pagoda," it being half-way from the anchorage to Canton. It is much decayed. This is the one from which some American sailors, a few years ago, in a frolic, took one of the small images which are kept in the first story, and, on being discovered, they drowned the idol in the river, which cost the comprador and others some hundreds of dollars. The large pagoda, about the middle of the cut, is called, by foreigners, the Whampoa pagoda. It is built of brick, nine stories high, amounting to from two hundred to two hundred and twenty feet. It is said to be in good repair. It is uninhabited, hollow, and octagonal. The date of its erection is said to be preserved within it, and to be about four hundred years ago. The natives believe that, being very lofty, it has an influence on the air, and serves to avert storms and tempests.

The other on the right side of the cut, is a small and modern built pagoda, two or three stories high, and was built, as is said, to commemorate their victory over the British navy in 1808.

From the anchorage, at Whampoa, to the aea is about seventy-five miles. Macao lies near the sea. Lintin is an island in the river, half-way from Macao to Whampoa.

FARMERS' DEPARTMENT.

GARDENING FOR LADIES.

The accompanying amusing and instructive observations are taken from an excellent article in the *Gardener's* (London) *Magazine*, entitled "Instructions in Gardening for Ladies," by Mrs. Loudon:—

To derive the fullest enjoyments from love of flowers, it is absolutely necessary to do something toward their culture with their own hands. Labor is at the root of all enjoyment. The fine lady, who has a nosegay put on her table every morning by her gardener, has not a tenth of the enjoyment from it that the lady has who has sown the seeds, or stuck the cuttings, and watered and shifted, or transplanted, pruned, and tied up, or pegged down or thinned out the plants, and at last gathered the flowers herself. But we would have ladies of leisure do a great deal more than this. Let them hoe, and rake, and dig and wheel a barrow, and prune and nail wall-trees, handle a syringe, and work one of Read's garden engines. By these and similar operations, they will ensure health, without which there can be neither good temper, nor any kind of enjoyment whatever, mental or corporeal. The grand and all-pervading evil among ladies of independent fortune, is *ennui*, which everybody knows, is brought on from a want of rational and active operation. Now the pursuits of botany and gardening supply an occupation which is at once rational and active; and they supply it not only to the lady who has merely a love of flowers without a scientific knowledge of botany or a taste for the arts of design, and who may, therefore, cultivate her flowers, and perform her garden operations, without a greater exertion of mind than is required from a gardener's labor; but to the scientific lady, whose botanical knowledge, like that of the scientific gardener, may enable her to raise many new flowers, fruits, and culinary vegetables, by the different processes required for that purpose; and to the lady of artistical taste in drawing, painting, and sculpture, who may direct her attention to landscape gardening, and more especially, to the designing of flower-gardens and the introduction in them of the various kinds of ornaments of which they are susceptible; a subject at present as much in its infancy as botany was before the time of Linnæus. But, say some of our readers, "What, the Dutchess of ——— wheeling a barrow, and nailing wall-trees?" Yes, certainly, if she has nothing else to do, that will be an occupation equally active and rational. Why not a dutchess as well as a plain mistress; Suppose this dutchess at work in her garden, and that you were not aware that she has any title. Suppose her dressed in the simplest manner (as were the Vicomte d'Ermenonville's wife and daughters in the gardens of Ermenonville), what wonder would there be then? Ladies of rank are as much subject to the *ennui* as ladies without rank; and every lady, as well as every gentleman, has a portion of the day that she can call her own, when she may indulge in what she likes. If she has not, her life is not worth keeping. Did not the Earl of Chatham, notwithstanding his being prime-minister at a period the most important that ever occurred in the annals of this country, find time not only to lay out his own grounds, but to assist Lord Lyttelton in laying out Hagley; We insist upon it, therefore, that what we propose is just as suitable and necessary for ladies of the highest rank as it is for those without rank, provided they are equally without rational and active occupation of some other kind.

CORN-COB MEAL.

Sir: As the question of the value of the cob in feeding, when ground with the corn, is again coming into consideration, perhaps the following extract from "Steward's Stable Economy" might go far to decide it, in the minds especially of those who know that the cob is equal in *quantity* to the corn—the only consideration which is necessary in the present stage of the question; on some future occasion, it may be shown that the cob itself is fully equal in *quantity* to the same quantity of oats for this purpose.

'*Condensed food* is necessary for fast-working horses; their food must be in less compass than

that of the farm or cart horse, but to this condensation there are limits. Grain affords all, and more than all, the nutriment a horse is capable of consuming, even under the most extraordinary exertion; his stomach and bowels can hold more than they are able to digest; something more than *nutriment* is therefore wanted, for the bowels must suffer a moderate degree of distension, more than a wholesome allowance of grain can produce: they are very capacious; in the dead subject more than thirty gallons of water can be put into them; and it is thence evident they were not intended for food in a very condensed form, for it seems natural that they require a moderate degree of pressure or dilation to assist their functions, they must have something to act upon. Now, when hay is very dear and grain cheap, it is customary in many stables to give less than the usual allowance of hay and more corn, but the al teration is sometimes carried too far, and is often made too suddenly: the horses may have as much as they will eat, yet it does not suffice without fodder, and, having no hay, they will leave the grain to eat the litter: a craving sensation of emptiness seems to arise, and the horse endeavors to relieve it by eating straw. The sensation cannot be that of hunger, else the horse would devour his corn; but while he has plenty of grain and plenty of litter, the diminished allowance of hay is borne with impunity. But when a sufficiency is not obtained in *any* shape, the horse loses appetite and becomes emaciated; his bowels are confined, his flank is tucked up, and his belly almost disappears; in general he drinks little water, and when he takes much he is apt to purge. His belly is often rumbling, the bowels apparently containing a large quantity of air, which occasionally produces colicky pains; these horses are very liable to cribbiting and wind-sucking, and it is certain that these diseases are very rare among those that live on bulky food.

"When the ordinary fodder is very dear, its place must, therefore, be supplied by some other, which will produce a wholesome distension of the stomach, although it may not yield so much nutriment; straw, roots, either or both, may be used in such cases; the tucked-up flank, and the horse's repeated efforts to eat his litter, show that his food is not of sufficient *bulk* to sustain nature in her operations. And when *work* demands the use of condensed food in a horse that has been accustomed for some time to bulkier articles, the change must be made by degrees and with the greatest caution; remembering, that coming from grass or the straw-yard, the horse, for a time, requires more fodder than would be proper or necessary to allow him at his work, after a season."

Now, it would appear that the cob, ground with the corn, would be just the proper quantity of fodder for mixing with the corn, the condensed food, for almost all purposes; and nothing, surely, can be mingled with it more readily and conveniently, or so profitably as the cob, which at the same time saves the expense of shelling. When, therefore, the philosophy of the arrangement comes better to be understood, we may expect that to grind the cob with the corn will be the general practice, for the feeding of stock of all descriptions. Farmer's Cabinet.

SAVING SEEDS.

There is too great remissness among farmers in making a proper selection of seeds. Much of the success of the crop, not only as regards the quantity and quality, but the early or late maturity, is determined by the choice of seed. Let any farmer carefully examine his fields of wheat, corn, or other grain, and he will find some plants distinguished by their luxuries, productiveness, or early maturity, above the others. If these plants or seeds are preserved, and the same course followed with them, almost any desired quality may be made permanent, and the most essential benefit conferred on the cultivator. Some remarkable instances of these results are on record.

The early Essex pea was discovered by a friend of Dr. Anderson, who, observing among his early peas, one stem much earlier than any of the others, marked and preserved it carefully for seed. The plants produced the next year were also early, and were saved. From this beginning sprung the celebrated early pea, which in a short time spread over the most of England. In the United States, its qualities remain the same but the name has been changed, and it is now generally known as the Washington pea, one of the earliest peas yet known.

The celebrated Baden corn is another instance of the effect which care and attention can produce. More than twenty years since, Mr. Baden, of Maryland, commenced a system using for his seed corn, none except ears from stems producing two or more ears of corn. This practice he followed with the closest punctuality for several years, when he discharged two ears to a stalk, using only three or more, and by patient perseverance succeeded in raising the usual number of ears to five or six, and in some extraordinary cases, to ten or twelve on a single stem. Early maturity was not, however, a quality of this corn, and it is evident that corn of such bulk could not come forward sufficiently early to suit our northen climate. It is now extensively disseminated over the middle and southern states, and on the rich-corn-producing alluvial of the western rivers, has proved a most important acquisition.

In September, 1805, Dr. Freeman communicated to the Massachusetts Agricultural society the result of an experiment made by him, to hasten the ripening of beans. The earliest pods were preserved; the fullest, fairest beans planted, and this course followed for several years. The following table shows how much the ripening was accelerated by the process:—

Planted.	Gathered.	No. of days.
1801, May 10,	Sept. 9,	221
1802, May 11,	Aug. 21,	201
1803, May 10,	Aug. 8,	90
1804, May 8,	Aug. 4,	88
1805, May 6,	July 31,	86

At this point, the beans seemed to have reach-

ed the shortest period of their ripening in four years Dr. Freeman planted some of the beans a week later than the other, to try the effect of the heat of summer and later planting, and the result was a ripening as before, in eighty-five and eighty-six days.

These instances, although but a few of the many that might be selected, are sufficient to show, that in the selection of seeds, the farmer has in his own hands the means of not only adding to the quality of his crop, but materially accelerating its maturity, a point in some plants, corn for example, of the greatest consequence.

PREVENTURE OF THE WHEAT INSECTS, OR HESSIAN FLY.

Mr. E. l'Hommedieu, who lived and wrote, about fifty years ago, some excellent things upon agriculture, says "the wheat crop for many years in Suffolk co., N. Y. (his residence), averaged only five or six bushels to the acre, till the wheat insect—the Hessian fly, put an end to this kind of husbandry and in that respect, proved a blessing instead of a curse; no other way being found to prevent the injury to this crop by the insect, but by highly manuring the land." We observed during the devastation of this insect the past season, that wheat on strong and well manured land was but little injured, while that on poor land made nothing. There is no fear of the Hessian fly, where the soil has enough manure and lime to feed the crop.

Agriculturist.

ADVANTAGES OF STUDYING NATURE.

I HAVE before hinted that the coloring of animals is an important part in their economy. I remember holding a conversation with a scientific friend, as remarkable for the originality of his genius as for his love of piscatorial pursuits, and the conversation turned upon what was the best dress to fish in. Perhaps you are aware that Izaak Walton says, that a fisherman must be a sad man dressed in a sober suit. My friend, however, said that if he were to dress for fishing, he would put on a sky-blue coat and white waistcoat; he would dress "sky-fashion." Shortly after this conversation, while walking through a collection of aquatic birds, I was rather startled to find that they almost all wore blue coats and white waiscoats; almost all of them were dressed "sky fashion;" and if you look at the heron, you will see an illustration of this. Look at the sea-gulls, and you will find blue coats and white waistcoats upon them. Is not this astonishing? What could induce the little fish to come within the reach of the heron? Were he visible, depend upon it the fishes would go in all directions; but on account of his color, they are not able to perceive his presence. The color of birds will be found worth our attention. Colors, as I have said before, are invariably given for concealment. What, you will say, is the parrot colored for concealment? are those beautiful tropical birds colored for concealment? True, they are not colored for concealment, while they are in your cabinets, but put them in their native situations, and examine them there, and you will find that these brilliant colors are better defences than any more sober ones would be. Look at the heads of these creatures, and fancy them among the fruit-trees of tropical regions, and tell me if this gaudy plumage is not the best possible defence they could have. If you want a better illustration of this, look at the grouse of the northern regions. The feathers of the ptarmigan grouse are brown—the color of the heather in which it lives; and the eye of the sportsman will pass over it. But let the ground be covered with snow, and its color would make it a conspicuous object. What is to be done? No sooner does the snow begin to fall, than the ptarmigan takes off its summer coat, and puts on its winter great coat, which is white instead of brown, and thus the grouse is equally secure in the winter as the summer. I wish I could direct the attention of this audience emphatically to a study of the colors of the animal creation. It is a subject which, in this country, and more especially in our manufacturing districts, is too little attended to. Where are all our important and valuable works in natural history produced? Not in England. When does the English press give birth to those works in which every teint of the humming-bird, blazing and gorgeous as it is, is copied with the minutest accuracy? In France we have these works; but in England they are never purchased, and would never pay. And by whom are they there made to pay? The ornithologist? No: but by those who make up patterns for dresses. The weavers and manufacturers know the importance of studying the colors that nature puts together; and you will find that the authors of these works look for support to that class who have sense enough to see, that to "gild refined gold and paint the lily," or "add purple to the violet," would be extravagant; and that the combination of colors in the animal world, like all other operations of nature, is perfect. Nothing can be added or taken away without diminishing the effect of the whole. They are content, therefore, to take lessons of nature in this particular, and we all acknowledge the success with which they manage this department of their manufactures.

Lecture before the Royal Inst. Manchester (Eng).

MISCELLANY.

HARPER'S SCHOOL DISTRICT LIBRARY.

WE have before had occasion to speak of this valuable series of books, and we take pleasure in copying the following remarks of a contemporary upon this subject. They refer to a portion of the

message of the governor of the state of New York, to the legislature, January 3, 1841.

There is no part of Governor Seward's late message, in our opinion, more deserving public attention than that relating to these invaluable institutions; and most gratifying it is to learn that they are in a highly prosperous condition. We therefore give a distinct and separate insertion to the following extracts, and could wish that they might occupy a prominent place in every newspaper in the land. "There are," says the governor, "about eleven thousand school districts in the state. Of these school districts, there are very few which have not complied with the act providing for the establishment of school district libraries, and there are, at this time, in these various district libraries about *one million of volumes*. Within the five years limited by the law, there will have been expended in the purchase of books more than half a million of dollars. These libraries include general history and biography, voyages and travels, works on natural history and the physical sciences, treatises upon agriculture, commerce, manufactures, and the arts, and judicious selections from modern literature. Henceforth no citizen who shall have improved the advantages offered by our common schools, and the district libraries, will be without some scientific knowledge of the earth, its physical condition and phenomena, the animals that inhabit it, the vegetables that clothe it with verdure, and the minerals under its surface, the physiology and the intellectual powers of man, the laws of mechanics, and their practical uses, those of chymistry, and their application to the arts, the principles of moral and political economy, the history of nations, and especially that of our own country, the progress and triumph of the democratic principle in the governments on this continent and the prospect of its ascendency throughout the world, the trials and faith, valor and constancy of our ancestors, with all the inspiring examples of benevolence, virtue, and patriotism, exhibited in the lives of the benefactors of mankind. The fruits of this enlightened and beneficent enterprise are chiefly to be gathered by our successors. But the present generation will not be altogether unrewarded. Although many of our citizens may pass the district library, heedless of the treasures it contains, the unpretending volumes will find their way to the fireside, diffusing knowledge, increasing domestic happiness, and promoting public virtue."

After speaking of our enormous importation of articles of mere luxury, its injurious effect upon the country, and the importance of disseminating correct views, in relation to the encouragement of domestic industry, he again says: "I have observed with pleasure, that the School District Library, now in the course of publication by the enterprising Harpers, contains several interesting and instructive treatises upon political economy and agriculture, which cannot be without their just influence. The fruits of the seeds thus scattered, are sure to be gathered. It is only to be regretted that this generation should not allow itself to anticipate them." When it is considered that the children now being enlightened by these libraries, are to become future legislators, the importance of these remarks must be apparent to every one."

One other extract in relation to a most benevolent and judicious use of these libraries, and we have done. "The complaints of cruelty which heretofore engaged public sympathy, and brought our penitentiary system into disrepute, have altogether ceased. Sunday schools have been maintained; and, in pursuance of my recommendation, *the cell of each prisoner is always supplied with a volume of the School District Library*. This measure was followed by a gratifying improvement in the conduct of the prisoners. Many weary hours of solitary confinement are beguiled, resolutions of repentance and reformation are formed, and the minds of the unhappy convicts, accustomed to the contemplation of virtue and expanded by knowledge, are gradually prepared to resist the temptations which await them on their return to society." We wish that these enlightened and merciful views might meet the eye of every friend to humanity—that the prisoner's cell might everywhere be made a school of instruction, and his solitude relieved, and while sentiments of returning virtue would be excited within him, by the wholesome stimulus of intellectual occupation.

WARMING HOUSES.

THERE is much popular ignorance prevailing on the subject of warming houses both among the English and Anglo-Americans. One would have thought that the experiments of such men as Franklin and Rumford would have dispelled the illusions about people being more liable to catch cold when a regular and uniform heat is kept up in the apartments, than when these are traversed by currents from doors, windows, and every crevice, all rushing toward an open fire. But prejudices are hard to be overcome—the more so indeed, the more beneficial their abandonment. If we were really made hardier and acquired exemption from the complaints of our variable climate, during the autumn, winter, and spring months, by the common practice of using open fires—single windows and doors, we might give up the comfort of the opposition plan; but no such good follows our exposure; no frame, however vigorous, is exempt from the assaults of streams of cold air in our houses. This is not, however, a matter of theory, or to be argued from individual experience. Natural usage, in the coldest climates in Europe, is decisive on the point. The Russian Finlanders, and Swedes of all classes, are not ashamed to keep up nearly a summer heat in their houses during the winter months—they have no fears of being called effeminate: on the contrary, allege that sallying out of their houses into the external frosty air, they are able to bear and even enjoy this kind of exposure, or air bath, the better from their previous warmth—precisely for the same reason that a person with a vigorous circulation of the blood and hot skin, is better enabled to bear the shock of a cold bath. In the opposite circumstances of immersion in cold air or cold water, when a person is chilly and with a

pale skin, as when coming out from a cold room and imperfectly clad, he will suffer greatly, and be less able to resist the secondary and morbid effects of the cold. Rumford declares, that, notwithstanding his first prejudice to stove heat, he found, from an experience of twelve years' residence in Germany, not only that warm rooms are more comfortable in winter, but certainly tended to the preservation of health. Journal of Health.

SLATE PAVEMENTS.

Experiments have been made to ascertain the applicability of slate to other uses than the covering of houses. The result has been the discovery that, as a material for paving the floors of warehouses, cellars, wash-houses, barns, &c., where great strength and durability are required, it is far superior to any known material. In the extensive warehouses of the London docks it has been used on a large scale. The stones forming several of the old floors having become broken and decayed, have been replaced with slate two inches thick; and one wooden floor, which otherwise must have been relaid, has been cased with slate one inch thick, and the whole have been found to answer very completely. The trucks used in removing the heaviest weights are worked with fewer hands. The slabs being sawn, and cemented closely together as they are laid down, unite so perfectly that the molasses, oil, turpentine, or other commodity, which is spilt upon the floor, is all saved; and as slate is non-absorbent, is so easily cleaned, and dries so soon, that a floor upon which sugar in a moist condition has been placed, may be ready for the reception of the most delicate goods in a few hours. Wagons or carts, containing four or five tuns of goods, pass over truckways of two-inch slate without making the slightest impression. In no one instance has it been found that a floor made of sawn slate has given way; in point of durability, therefore, it may be considered superior to every other commodity applied to such uses.

DEVELOPMENT OF ODORS.

Every one is acquainted with the rotation which a piece of camphor undergoes in water, and the explanation of the fact which usually ascribes it to the disengagement of the odorant vapors which exhale from it. It is known also that the leaves of the *schinus molle* placed on water, forcibly retract when the surface of the water is covered by a layer of odoriferous oil. M. Morren has just observed a similar phenomenon produced by the volatile oil secreted by the down of the *passiflora fœtida*. When some of the down or hair is placed under water, a small drop of green oil detaches from it, and swims on the water. This drop expands, contracts, expands, contracts again, then seems to burst with force, but the fragments unite to expand again a moment after, and thus the action goes on for about ten minutes, after which the oil is by degrees concentrated, and becomes motionless. These facts may serve, perhaps, to point out a physical theory of odors.

PAINT FOR METALLIC SURFACES.

The scaling off of paint from metallic surfaces arises generally from the contraction of the paint, leaving minute cracks through which moisture penetrates to the surface, and insinuates itself below the scale: this may be greatly palliated, by heating the paint before applying it, and by melting in it a small portion of beeswax, which prevents the shrinkage and the formation of cracks. A paint is much used in India for ornamenting work which is to be exposed to heat and moisture—viz: finely-granulated tin, or rather tin in fine powder (formed by shaking melted tin in a joint of bamboo, or a wooden box), this is mixed up in a vehicle of glue-water, is burnished by an agate when dry, and is then covered with oil varnish: in this state it defies for a long time the sun and rain of a tropical climate.

THOUGHTS ON EARLY SPRING.

By the deep forest's yet unwakened green,
To tread on withered leaves, and herbage new,
And trace the first young buddings' tender sheen;
The downy liverwort's sweet eye of blue,
And pale anemone, on amber stem,
Faint—blushing delicate—the woods' first gem.

Where the fresh fountain bubbles into light,
Amid the ferns that fringe her mossy brink,
Inlaid with scarlet berry, gleaming bright,
Invites the wanderer to stoop and drink:
O! give me one sweet day amid the woods,
The vernal, stirring breeze, and roused-up floods!

The fitful spirit of the wilderness
Raiseth the heart, and the adoring eye,
To Him who doth with early beauty bless
The slender service-tree that waves so high,
Her snow-white wreaths amid the unclad wild;
And owns the sparrow for his mercy's child.

I love all blossoms of the early spring;
All living things the winter-storm hath left;
The red-cup moss, the myrtle—fragrant thing!
Each tinge of life within the rock's dark cleft;
And when the blue-bird warbles sweet and clear,
To rest in some charmed spot the hymn to hear.

Where the sweet water-fall is chiming low,
Amid the shrub-roots, and the old gray stone;
Catching the sunbeams in her sparkling flow,
And shadows of the forest branches, lone,
Yet leafless, rustling tuneful over head,
With thwarted twigs beneath the blue sky spread.

There flow to Him, my soul! my joyful soul;
Upward with the elastic air, and scent
Of early buds; and gentle sounds that roll
Amid the boughs; and song of waters, blent
With hum of new-waked insect, on the wing,
And all the breathing harmonies of spring.

He who hath formed us for devotion, He
Hath worn our nature; and hath loved to pray
Where the wild woods, his temple's canopy,
Gave a religious color to the day;
Here let us gather strength, e'er we depart
Where the world calls. God keeps the pure in heart.

AN ICEBERG.

Dana, in his "Life before the Mast," gives the following graphic description of an iceberg in the Southern ocean:—

At twelve o'clock we went below, and had just got through dinner, when the cook put his head down the scuttle and told us to come on deck and see the finest sight that we had ever seen. "Where away, cook?" asked the first man who was up. "On the larboard bow." And there lay, floating in the ocean, several miles off, an immense, irregular mass, its top and points covered with snow, and its centre of a deep indigo color. This was an iceberg, and of the largest size, as one of our men said who had been in the Northern ocean. As far as the eye could reach, the sea in every direction was of a deep blue color, the waves running high and fresh, and sparkling in the light, and in the midst lay this immense mountain-island, its cavities and valleys thrown into deep shade, and its points and pinnacles glittering in the sun. All hands were soon on deck, looking at it, and admiring in various ways its beauty and grandeur. But no description can give any idea of the strangeness, splendor, and, really, the sublimity, of the sight. Its great size;—for it must have been from two to three miles in circumference, and several hundred feet in height;—its slow motion, as its base rose and sank in the water, and its high points nodded against the clouds; the dashing of the waves upon it, which, breaking high with foam, lined its base with a white crust; and the thundering sound of the cracking of the mass, and the breaking and tumbling down of huge pieces; together with its nearness and approach, which added a slight element of fear—all combined to give to it the character of true sublimity. The main body of the mass was, as I have said, of an indigo color, its base crusted with frozen foam; and as it grew thin and transparent toward the edges and top, its color shaded off from a deep blue to the whiteness of snow. It seemed to be drifting slowly toward the north, so that we kept away and avoided it. It was in sight all the afternoon; and when we got to leeward of it, the wind died away, so that we lay-to quite near it for a greater part of the night. Unfortunately, there was no moon, but it was a clear night, and we could plainly mark the long, regular heaving of the stupendous mass, as its edges moved slowly against the stars. Several times in our watch loud cracks were heard, which sounded as though they must have run through the whole length of the iceberg, and several pieces fell down with a thundering crash, plunging heavily into the sea. Toward morning, a strong breeze sprang up, and we filled away, and left it astern, and at daylight it was out of sight.

Civility is not so slight a matter as it is commonly thought; it is a duty we owe to others as well as ourselves; for how unjust is it to distress a person who merits no punishment?

ORIGIN OF HATS.

Hats are said to have been used in the beginning of the fifteenth century. But the hatters have a tradition among them, that while St. Clement, the fourth bishop of Rome, was fleeing from his persecutors, his feet became blistered, and, to afford him relief he was induced to put wool into his sandals. The wool, by the heat, motion, and pressure of his feet, before long, assumed a uniformly compact substance, which has since been denominated *felt*. When he afterward settled at Rome, he is said to have improved the discovery. Hatters, particularly in Ireland, still hold their festival on St. Clement's day. Hats, however, are first spoken of in history, at the period when Charles VII. made his triumphant entry into Rouen, in the year 1449. Their use, indeed, is said to have been of much longer standing among the ecclesiastics of Brittany; but these were a kind of caps; whence the square caps worn in our universities. From Stow's *Chronicle*, we learn, that about the beginning of the reign of Henry VIII. began the making of Spanish felts, in England, by Spanards and Dutchmen. In the second year of James I., the felt-makers of London obtained a corporation, and hired a hall near Christ church, the king granting them various privileges and liberties for their support.

PENNSYLVANIA.

The following account of the origin of the name of Pennsylvania is extracted from a letter written by William Penn, its founder, dated January 5, 1681:—

"This day, after many waitings, watchings, solicitings, and disputes in council, my country has been confirmed to me under the great seal of England, with large powers and privileges, by the name of Pennsylvania, a name the king would give it in honor of my father. I chose New-Wales, being a hilly country, and when the secretary, a Welchman, refused to call it New-Wales, I proposed Sylvania, and they added Penn to it; though I was much opposed it, and went to the king to have it struck out. He said it was past, and he would take it upon him; nor could twenty guineas move the under-secretary to vary the name; for I feared it might be looked upon as a vanity in me, and not as a respect in the king to my father, as it really was.

A modern writer gives the following enumeration of the expression of the female eye: "The glare, the stare, the sneer, the invitation, the defiance, the denial, the consent, the glance of love, the flash of rage, the sparkling of hope, the languishment of softness, the squint of suspicion, the fire of jealousy, and the lustre of pleasure."

Wilberforce, who had a great taste for horticulture, considered flowers to be *the smiles of the divine goodness*.

LITERARY NOTICES.

Life and Writings of Samuel Johnson, LL. D.; 2. vols. Harper & Brothers. Numbers CIX.–'X. Family Library. This memoir and collation of the most valuable writings of the great English scholar and moralist, have been carefully prepared and arranged by the Rev. Wm. P. Page, of New York city, and composes a most interesting compendium of the literary labors of a truly great man. The works of Dr. Johnson have heretofore been in a form too volumnious and expensive for popular use, and much of their salutary influence has been unfelt. The compiler of these volumes has done a public service by collecting within a small space, and in a cheap form, the purest gems from the capacious mine of intellectual treasure which the complete works of Johnson imbody. We cordially recommend them to public favor and use.

Bryant's American Poets: Halleck's British Poets. 1 vol. each. Harper & Brothers. Numbers CXI.–'XII. Family Library. These two volumes contain choice selections from the poetical writings of American and English authors, carefully chosen and arranged by two of our best poets. The Messrs. Harper could not have intrusted this labor to better hands; and so well are the compilers known, that the best recommendation we can give the books, is to say that they were carefully prepared by William Cullen Bryant, and Fitz-Green Halleck. The selections from the British poets seem incomplete, inasmuch as the effusions of none of the recently departed, or living poets of Great Britain, are among them. Mr. Bryant promises another volume, if the present one meets with favor; and we suppose it to be the intention of Mr. Halleck to form a second volume of selections from the later poets of Britain. We hope this may be done.

Keightley's History of England; 5 vols., Harper & Brothers. These volumes compose Nos. CXIV.–'XIX. inclusive of the Family Library, and are a most valuable acquisition to that popular series. English history may be justly deemed a portion of our own history, for we are connected with England by a community of language, laws, literature, and social customs, as well as the most intimate and valuable commercial intercourse. To understand our own history well, we must be instructed in antecedent events, and these events, bearing upon our birth and growth as a nation, are recorded chiefly in English history. The work in question is succinct, yet sufficiently detailed to render it perspicuous, and afford to the reader all the information upon the subject, that is requisite. The plan of the work may be summed up in a few words. It commences with the events of the early periods, from the invasion by Julius Cesar till those of the Plantagenets, briefly noted, yet sufficiently detailed to give them interest. The Tudor period is treated at some length, as including the time when great revolutions in government and religion took place; but the greater portion of the work is occupied by a narration of events recorded in the annals of the house of Stuart; while the portion of space allotted to the house of Brunswick is less in extent than that given to either of the preceding periods. With the Stuarts the war of prejudices and the conflicts of parties began, which have ever since continued, and hence, to give an impartial history, where the testimony of witnesses on both sides might be heard, it was necessary to go more into detail. With the accession of the house of Brunswick, the great political contest ended, and the history of England henceforth consists chiefly of the struggles of whigs and tories for place and emoluments, of parliamentary debates, and of long foreign wars, to narrate which, intelligibly, should be done in minute detail, and subversive of the design of the work. These, therefore, are dwelt upon in brief.

Lectures to Children: Filial Duty Recommended: Sunday School Orator: Lectures on Proverbs. These are the several titles of four little volumes before us, from the pen of the Rev. George Coles, assistant-editor of the Christian and Advocate Journal. They are published at the "Methodist Book Concern," 200 Mulberry street, N. Y., and are designed for the use of sabbath schools, for which they are admirably adapted. The first conveys to the juvenile mind sound instructions in the natural sciences, pleasingly blended with religious precepts. The second is made up of selections from profane history of examples of filial duty and affection with their rewards, and their opposites with their punishments. Such a little work must have the most salutary influence upon the young heart. The third is composed of original and selected pieces in prose and verse, and designed to furnish subjects for recitations at sabbath school celebrations. Its value is evident in its design. The fourth is a series of lectures on passages in the book of Proverbs, explanatory of their meaning, and persuasive to their practice. We cordially recommend these little volumes to the friends of sabbath schools.

Costumes of the Aborigines of America. The Messrs. Langley have published the first part of a work bearing the above title. It contains twenty-four plates, illustrative of the manners and customs, and "Portraits to the Life," of the inhabitants of Virginia, at the time Sir Walter Raleigh arrived there. Brief letter-press descriptions accompany each plate. The graphic sketches are copied from old and very rare volumes, by one of the most eminent artists of our country. The second part will contain about sixty plates, from designs of *Le Moyne*, an artist who accompanied the expedition of Laudonnier to Florida, in 1564. This work, when completed, will be a most valuable acquisition to our literature.

The Hour and the Man. By Harriet Martineau. 2 vols. Harper & Brothers. This is an historical tale, full of interest in the plot, and rich in valuable ideas, bearing upon the constitution of society in general. The tale is founded upon events antecedent to, and connected with, the revolution in Hayti, and the political supremacy of the blacks of the island. It contains an appendix, which is an interesting collation of historical facts, relating to that extraordinary event. The authoress is well known as one of the most nervous writers of the day. Her sentiments on the question of slavery, is well known; and as her feelings are strongly enlisted in this subject, the work in question is undoubtedly a fair portraiture of them.

The *Lady's Book* for February is rich, as usual. A handsome steel-plate by Dick (Niagara Falls), and a colored fashion plate are its pictorial embellishments.

HOMEWARD BOUND.—Life in the West.

HOMEWARD BOUND.

The "Badger," a paper published at Platteville, Wiskonsin, gives the following sketch of the adventures of a party of young men, who set out on a hunting and exploring expedition to the northern regions of that territory. An interesting and amusing volume might be made of similar truthful sketches of the personal adventures of the sturdy backwoodsmen, by one who would take the pains to collect them. Our frontispiece represents the party below mentioned, homeward bound, and dining upon the music of the fiddle. Pito, a Jewish philosopher, asserts that Moses subsisted forty days upon Mount Sinai, by listening to the music of the spheres. Although the fiddle of our heroes answered an excellent purpose as a substitute for venison and the like, for a day or so, yet we doubt whether its charms would remain so long potent, as the music on which the Jewish lawgiver so long subsisted.

On the seventeenth instant, three of our friends, two of whom are residents of long standing in this town, set out on a journey, on foot, to see the land of promise on the north of the Wiskonsin. With knapsacks on their backs, two with guns, a third with an axe, and one with a violin in addition to his equipment, to enliven their encampment, they deemed themselves able and buoyant enough to reach the Pacific ocean. At Prairie du Chien they were joined by an acquaintance. At that town they found the sick to outnumber the well; and of the United States troops stationed there, one hundred were on the sick list. Thence they struck for the Kickapoo country, which they were told was the finest country in the world; abounding in bears, deer, rattlesnakes, and everything else that was charming. They walked, in a northeast direction, from dawn till dark, finding the country nothing but a succession of sharp ridges and intervening hollows, nearly destitute of timber. At night they camped out; but instead of a delicious slice of fat bear, or the sweet meat of a doe or fawn, they were fain to make a supper on a prairie chicken, a pheasant, and two pigeons—neither bears nor deer having been seen—the absence of the rattlesnakes was not regretted. On lying down to sleep one of the company expressed his fears of a visit from the *painters;* but another thought such a visit would give them an opportunity of having their likenesses taken—on explanation, it was understood that *panthers* were more plentiful than painters in such places. One of the party waking in the night, and finding himself benumbed with the cold, found that his friend (who must have had the idea of the *painter* still in his head), had interposed himself between the said party and the fire! Now the idea of putting your friend between you and the panthers is too much like politics; so the fire was renewed, places readjusted, and equal chances of being eaten up encountered. The next morning they resumed their journey, and two hours' walk brought them to an abandoned Indian village, delightfully situated in a bottom, containing about a quarter section of land, which was the only place they saw fit for a settlement. Having seen enough of the country, they concluded to return home by rafting down the Kickapoo. They made a good raft of four logs, on which they embarked. The course of the river being very serpentine, they made but little progress in a direct line; and the river was so full of snags that one man was kept constantly at work with a pole in his hand, to guide the raft clear of obstructions. They found the Kickapoo a beautiful stream, about thirty feet wide, about fourteen feet deep in the shallowest places, and flowing between two ranges of mountains or bluffs from two to three hundred feet high. At night they encamped again, making a grand supper on two pigeons—half a bird apiece. Next morning—

> "All hands unmoor!" the voyageurs loudly cry;
> "All hands unmoor!" the caverned rocks reply.

Having no food they tried the good effects of the fiddle, which answered pretty well but not equal to coffee and beefsteak. Owing to the siren strains of the violin, or some other cause, the man with the pole allowed the raft to strike a snag, when the whole concern foundered—guns, teapot, tin-cups, music-book, and two pairs of boots, which two of them had taken off, sunk or floated off.

To scramble ashore, to make a fire, to fish up the two guns, were easily accomplished; but to supply the loss of the boots was not so easy to the two naked feet: so one took his knapsack and made a pair of mocassins, and the other his fiddlecase, which was merely a bit of painted linen, for the same purpose. Hereafter, let no persons go to explore a new country without a fiddle, seeing the many useful purposes to which it may be applied. The first movement now was to ascend the steep and rocky bluff, strewn with sharp flints, which inflicted painful bruises on the unprotected feet of two of the party. A walk of a few miles brought them to a clearing, where they found a family, the lady of which extended to them that sympathy, which the absolutely fainting condition of some of them from the want of food rendered necessary. Here they found good comforts for the inner man, which their kind hostess spread before them, refusing all payment until it had been pressingly offered to her.

They then directed their march to a ferry across the Wiskonsin, and thence took the road for Lancaster, lodging one night at a house by the way. Arrived at Lancaster, they were hospitably entertained, and furnished with such shoes and socks as their crippled condition enabled them to wear. The next night brought them to Platteville, having been absent eight days.

Here was a party of strong and hardy young men, one at least of whom is a thorough back woodsman, going hardly more than a day's journey beyond the frontier settlements, and yet by

a trifling accident were reduced to the situation of shipwrecked mariners. Their own account of their difficulties, of which this is a brief outline, has caused a deal of mirth in Platteville, and none seem to enjoy the laugh more than themselves.

IMPRISONMENT FOR DEBT.

The laws of the Egyptians in respect to insolvent debtors, were mild and reasonable. They gave the creditor no right over the person of his debtor; and the sole remedy was against his property. But the unnecessary contracting of debts in Egypt was restrained by the following singular regulation: The debtor was obliged to give in pledge the embalmed body of his father, to remain with the creditor till the debt was discharged. He who died without redeeming this sacred pledge, was deprived himself of all funeral obsequies.

The laws of Greece were rigorous in the extreme. At Athens, for instance, the dead bodies of debtors belonged to the creditors, who had the power to prevent their burial, until their debts were paid. The great Miltiades died involved in debt, and the noble Cimon his son had no other method to redeem his father's body, but by taking his debt and fetters on himself.

The execrable atrocity of the early Roman laws with respect to bankruptcy are well known. The famous laws of the twelve tables, so much eulogized by Cicero, gave the creditor almost unlimited control over his debtor. After the debt was established, or admitted, they allowed the debtor thirty days to raise and pay the money, or to find security for the payment of it. At the end of the thirty days, the law delivered him into the hands of his creditor, who might confine him for sixty days in a private prison, with a chain of fifteen pounds' weight, on an allowance of only fifteen pounds of rice, and during this time he was to be thrice exposed in the market-place, to raise the compassion of his countrymen. At the end of sixty days, if he was sued by a single creditor, that creditor might sell him for a slave beyond the Tiber. If sued by several creditors, they might put him to death, and divide his limbs among them, according to the amount of their several debts.

Two hundred years before Christ, the Petilian law enacted that the goods, and not the body of the debtor, should be liable to the demands of the creditors. This was the first step toward the insolvent system. At a subsequent period the Julian law provided the *cessio bonorum*, by which the debtor, on making over the whole of his property to his creditors, was liberated from his debts. The law afterward underwent some alterations, as in the code of Justinian, the *cessio bonorum* discharged the person of the debtor, retaining the liability of his after-acquired estate. The creditor had his option, either to allow the debtor five years to pay his debts, or to take his property and discharge his person.

As we approach the periods of refinement and civilization, the severity of those laws is gradually mitigated, until in most modern nations all traces of their cruelty are removed. All commercial nations of the present time have their general insolvent systems, except ours; and in this country—although we yet lack a uniform system of bankruptcy, which the framers of our constitution contemplated, and expressly provided for in that instrument—the majority of the states have provided insolvent laws, founded on the *cessio bonorum* of the Roman law, so that the debtor, on surrendering his property, may be exempted from confinement within the walls of a prison.

The want of uniformity in these state regulations, is a serious evil, which has long attracted public attention. In some of the states, a residence of one and two years is required before an insolvent can entitle himself to the benefit of the laws; in others, the debtor must have been actually confined in jail for a stated time prior to his petitioning for release. The creditor, in some instances, has the power, by paying prison-charges, to keep his debtor in confinement at will; and where the latter has made application for discharge under the insolvent law, the creditor has power in some states, as in New Jersey, if dissatisfied with the disclosure which the debtor makes, to keep him in jail for nine months or a year, before he can get a discharge. The laws of other states are more liberal, and the debtor, whether in prison or not, if insolvent, may, on a full surrender of all his property, be exonerated from imprisonment on account of his debts. These insolvent laws are searchingly severe, as they should be, to discover, under the solemnity of an oath, all the property a debtor may possess; and fraud or falsehood, on the examination, is punished as a felony.

The debtor, notwithstanding his release from imprisonment, gains little by the discharge. He is still a prisoner, confined within the limits of his own state, beyond which, if he passes, he is liable again to be imprisoned on the same debts. Nor is this the worst view of the case. His debts still hang over him in judgments; and the more honest and industrious he is, the less likely is he to obtain a discharge from his creditors. Under the insolvent laws, therefore, it would seem that honesty is not encouraged; for whenever a debtor is reputed to be dishonest, dissipated, or dissolute in his habits, his creditor is always ready and willing to compromise the debt for anything he can get, under the conviction that if he does not take what is offered, he will obtain nothing, by holding a claim against one so destitute of character. While the operation of insolvent laws thus falls upon the honest but unfortunate debtor like a blighting curse, he is afraid to borrow from his friends to recommence business, for fear his creditors will grasp their claims with more tenacity, and for a second time prostrate him in the dust. How many poor, but honest debtors, after vain and fruitless efforts to compromise and get released from their debts, at last become disheartened and discouraged, and losing all pride and spirit of ambition, contract idle and dissolute

habits, which either terminate in an untimely death, or render them incapable to provide for their families.

But the creditor portion of the community—those who are industrious, economical and prudent in their affairs—are, after all, great sufferers from the inequality and want of uniformity in the laws respecting debts and credits. They learn by bitter experience, how much less secure are their debts in some states than in others; and upon how slender a thread, in times of commercial revulsion, their own fortunes, and the fruits of years of patient toil, may often depend.

By the laws of some of the New England states, the real estate of a debtor, taken in execution, is set off to the creditor by appraisal, generally for all, and frequently for more than its value. In some of the other states, the property of the debtor when taken must be appraised, and if it will not sell at auction for one half or two thirds the appraisal, and the creditor declines taking it at the appraisal, there is a stay of execution for a longer or shorter period. In other states, there are laws, commonly called *stay* laws, *replevy*, or *relief* laws, by which the debtor, on giving security for the debt, obtains a delay varying in time according to the amount of the debt. In some states, the debtor's property may be attached on mesne process, at the will of the creditor, without any affidavit that he has in fact any claim; in others, he must make oath to his claim, and furthermore that he fears his debtor is about to secrete or convey away his property, before he can procure his writ of attachment. In some states, he is not allowed to attach any property, while the person of the debtor is at large, who must be first taken, if an inhabitant, before process can issue against his estate; in others, the body of the debtor cannot be arrested, if he have property and tender it to the creditor. And while, in some states, the amount of property which a poor debtor is allowed to retain, exempt from attachment, is quite small and utterly insufficient, in others an amount is placed beyond the reach of the creditor, greater than debtors generally possess, who are unable to pay their debts.

Nothing can be plainer, than that where the property of the debtor is insufficient to pay his debts, all the creditors ought to share it proportionally; and this has been the practical rule under the civil law, and in all countries where it has been adopted as the common law. In England, and a greater part of the United States, such is the practical rule; and it is surprising that any state or community, in the least advanced in civil polity, should form an exception to so just a rule, and permit some one creditor, or some few, no more deserving, perhaps much less so, than the rest, to seize upon the whole property of the debtor, and entirely defeat the claims of the others. Yet such a defect does exist in several of the states.

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"The earliest laws, till 1654," says Bancroft, "did not permit any man's person to be kept in prison for debt, except when there was an appearance of some estate, which the debtor would not produce." At a later period, more rigorous laws were enacted; the debtor might be imprisoned for any sum however small, and at the pleasure of his creditor. Holding the law of arrest over the head of the debtor, the trader did not hesitate to trust him, even with the full knowledge of his inability to pay—relying upon the power in his hands to extort his money from the family or friends of the debtor, at the doors of the jail.

The monstrous improvidence, immorality, and suffering, occasioned by these laws, afterward led to their modification in several of the states; and imprisonment for debt was abolished, on small sums, in some states under ten dollars, others thirteen, and others twenty. The public mind next began to reflect upon the impolicy of imprisoning females for debt, and they were exempted from arrest; but it is only within the last ten years, that this amelioration has become general. As the law of many of the states stood down to 1820, females were subject to arrest for debt, and to confinement in the common jails, in some cases in the same apartments with thieves, robbers, and murderers. The common jails in many of the states, were at that period the worst dens of iniquity. The poor debtor was subject to be confined in the same cell with the most abandoned criminal; and to look through the grates, be fed on the same coarse fare (unless some friend was at hand to bribe the jailer into compliance), and exposed to all the sufferings and evils of such society. The jailer naturally looked upon all as criminals, the law having made no distinction, and imposing upon him no obligation to treat one class of prisoners in a different manner from another. If a faithful history of our common jails, and of the miseries and sufferings occasioned by the law of imprisonment for debt, could be presented to the world, men would cease to wonder at the recital of the deeds of what we are accustomed to consider the dark ages. We should find ourselves hardly yet beyond the gloom of their shadows.

The next amelioration in the condition of imprisoned debtors, was the extension of the prison liberties. These were, after 1800, by one state after another, extended first from the four rods square fenced in with the jail, to four, six, ten, and twenty acres; then to the limits of the school district, ward, or parish; then to the limits of the town; afterward to the county, and finally to the limits of the state. But no debtor could obtain the liberties of the prison-bounds, unless he could procure good and sufficient bail—for want of which many a friendless debtor has remained for years a prisoner, and at last died in jail.

Another enactment followed, by which the creditor who thrust his debtor into prison, was compelled to become answerable for his support, and other prison-charges. Following this, came the law of insolvency, now almost universal, by which the poor debtor, on taking the oath of poverty, was released from confinement, on condition of paying prison-charges, and the costs of his discharge, which in some cases amounted to even more than the original debt on which he was confined. Instances have occurred, in which

the prisoner, after having taken the poor debtor's oath, being utterly unable to pay the prison-charges, has been detained in jail, until death came, and *discharged him from prison!*

The states of Kentucky and New York gallantly led the way in expunging from their statute-books these relics of the barbarous ages. One state after another is following in the same path. In the constitutions of several of the new states of the West, imprisonment for debt is prohibited, except in cases of fraud; and in all the states, if we may except Delaware, New Jersey, and Maryland, the laws in relation to imprisonment for debt have within the last twenty years been essentially modified. Not many years more, we trust, will elapse, before the last relic in the statutes of any American State, allowing imprisonment for debt, shall be removed.

The mischiefs which have resulted from the existence of this anomaly in the laws of a free people, have been almost without a limit. The experience both of England and the United States has proved its complicated evils. In both countries, it has come to be understood, that creditors in general derive no advantage from the power of imprisonment which they have held over their debtors. It is found, that wherever it has been abolished, credit and trust are regulated by character and property. Men must be honest and industrious, to obtain credit; and it will no longer be extended to the debtor under the fallacious calculation that payment can be enforced under the law of arrest. A far more wholesome state of things will prevail. And when government has declared the inviolability of contracts, and maintains its courts to enforce them—when it gives the creditor a lien upon all the property of the debtor, and the means of discovering and taking possession of it, and has provided also for the due punishment of fraudulent contracts, and concealments—when, in addition to all this, the creditor may by proper precautions of mortgage or other security, guard against fraud or misfortune—it would seem that the government has done all that justice should require, and is not bound to find prisons and fetters for its citizens. It may be questioned, says a late writer, whether the right actually exists, to imprison a man for a civil debt, inasmuch as it violates antecedent obligations, equally obvious and more sacred: those which exist between the citizen and his country, and those which proceed from the prior relations of parent and child, husband and wife, master and servant, and many others, which are all violated and rent to pieces, when a man is permitted, for his special claim of a posterior origin, to seize upon the debtor, and by imprisoning him, deprive his country of the intellectual or bodily services of a free citizen, and all those, he was under previous obligations of nature and duty to labor for and support, of the exercise of his reason, liberty, and occupation, for these purposes.

In this matter, there is but one plain and defensible principle. It is, to make property only, and men's own prudence, their security, for all civil demands. There should not be such a title in the civil cases, as the *capias*. No man should be suffered to pledge his body, nor the creditor to seize the person of his debtor. He should, however, have every possible facility for obtaining the property of his debtor. Where it is visible, there can be no difficulty; where it is supposed to be concealed, or to exist in the shape of bonds, debts, stocks, or other property not liable to seizure, or in trust—laws, where they do not already exist, may be made to reach it. The *trustee* process, and execution in the nature of an attachment on effects in the hands of garnishees, as practised in some states, would be entirely competent. In this way, persons may be compelled to discover property in their hands, and be made liable to the extent of the debtor's estate.

Solon remarked upon the inconsistency of laws, which exempted the implements of trade, and articles of necessity of the debtor, from the creditor's demand, and yet subjected his body to sale or imprisonment; and, considering the rights of the debtor, as a citizen of Athens, to be paramount to those of his creditors over his person, he provided against the violation of a citizen's liberty on account of his debts.

The only imprisonment for debt that seems to be justifiable, is in cases where the debtor refuses to surrender his property for the benefit of his creditors, or where he has attempted fraudulently to conceal his effects. In such case, the debtor converts his misfortune into a fraud, and should be visited with punishment, as for any other crime against society. "Let the whole," says Lord Brougham, "of every man's property, real and personal, be taken for the payment of all his debts equally, and in cases of insolvency, let all be distributed rateably; let all he possesses be sifted, bolted from him unsparingly, until all his creditors are satisfied by payment or composition; but let his person only be taken when he conceals his goods, or has merited punishment by fraudulent conduct.

It is a remark of one of the most distinguished jurists of England, Lord Eldon, that "the law of arrest is a permission to commit acts of greater oppression and inhumanity than are to be met with in slavery itself." And it is impossible for any one to show, that the power of arrest and imprisonment has a single good consequence, to be placed as an offset to the intolerable evils of which it is productive. The law is, in fact (as is well remarked by the learned M'Culloch), advantageons to none but knaves and swindlers, and the lowest class of attorneys, who frequently buy up small accounts and bills, that they may bring actions upon them, and enrich themselves at the expense of the poor, by the magnitude of their charges. "Those who have made the laws," says Dr. Johnson, "have apparently considered that every deficiency of payment is the crime of the debtor. But the truth is, that the creditor always shares in the act, and often more than shares the guilt, of improper trust. It seldom happens that any man imprisons another for the debts which he suffered to be contracted in hope of advantage to himself, and for bargains

m which he proportioned his profit to his own opinion of the hazard; and there is no reason why one should punish another for a contract in which both were concerned." Laws of Trade.

PECADILLOES OF THE EARLY SETTLERS.

From an article in the Boston Law Reporter, entitled "Notes on the early Jurisprudence of Maine," we extract the following passages, illustrative of the manners of olden times. We are apt to think our grandfathers and grandmothers were more virtuous than the people of this generation, but it will be found by comparison, we think, that they were about as wicked as we. Let the subjoined facts testify:—

"At the first court held by Gorges (the original proprietor of Maine), September eighth, 1640, there were pending twenty-eight civil actions, of which nine were jury trials. There were also thirteen indictments, which were tried by the court, without the intervention of a jury; four of these were against George Burdett, minister of Agamenticus, now York, for adultery, breach of the peace, and incontinency; and what appears singular, Burdett recovered judgment in two cases for slander against persons, for reporting the very facts for which he was found guilty at the same court."

The following are extracts from the proceedings of the early courts of Maine.

"We present Goody Mendum for saying to Thomas Sullivan and John Daniel, 'Submit, ye devils.' Fined 2*s*. 6*d*. for swearing."

"We present Jane, the wife of John Andrews, for selling a firkin of butter unto Mr. Nic Davis, that had two stones in it which contain fourteen pounds, wanting two ounces, in weight. This presentment confessed by Jane and John Andrews, in five pound bond thus: Jane his wife, shall stand at a town meeting in York, and at a town meeting in Kittery, till two hours time be expired, with her offence written in capital letters, pinned upon her forehead."

"We present Mrs. Sarah Morgan for striking her husband. The delinquent to stand with a *gag* in her mouth half an hour at Kittery, at a public meeting, and the case of her offence writ and put upon her forehead, or pay fifty shillings to the treasurer."

"Thomas Nuberry for his light and uncivil carriage about the *wimmin* is concluded to pay five pounds to the treasurer, or to receive ten lashes on the bare skin at the post. Nuberry stands to the fine."

"We present Jonathan Thing for speaking discornfully of the court of York saying, 'No question but you may cast any case at the court of York, so long as Harry the coachman sits judge.' Sentenced to have twenty lashes, or to redeem it with twelve pounds."

"Mr. George Cleaves was fined five shillings for *rash* speeches."

"We present Christopher Fursone for living from his wife. One twelvemonth's time given him by the court to procure his wife to come over, or else return to her again."

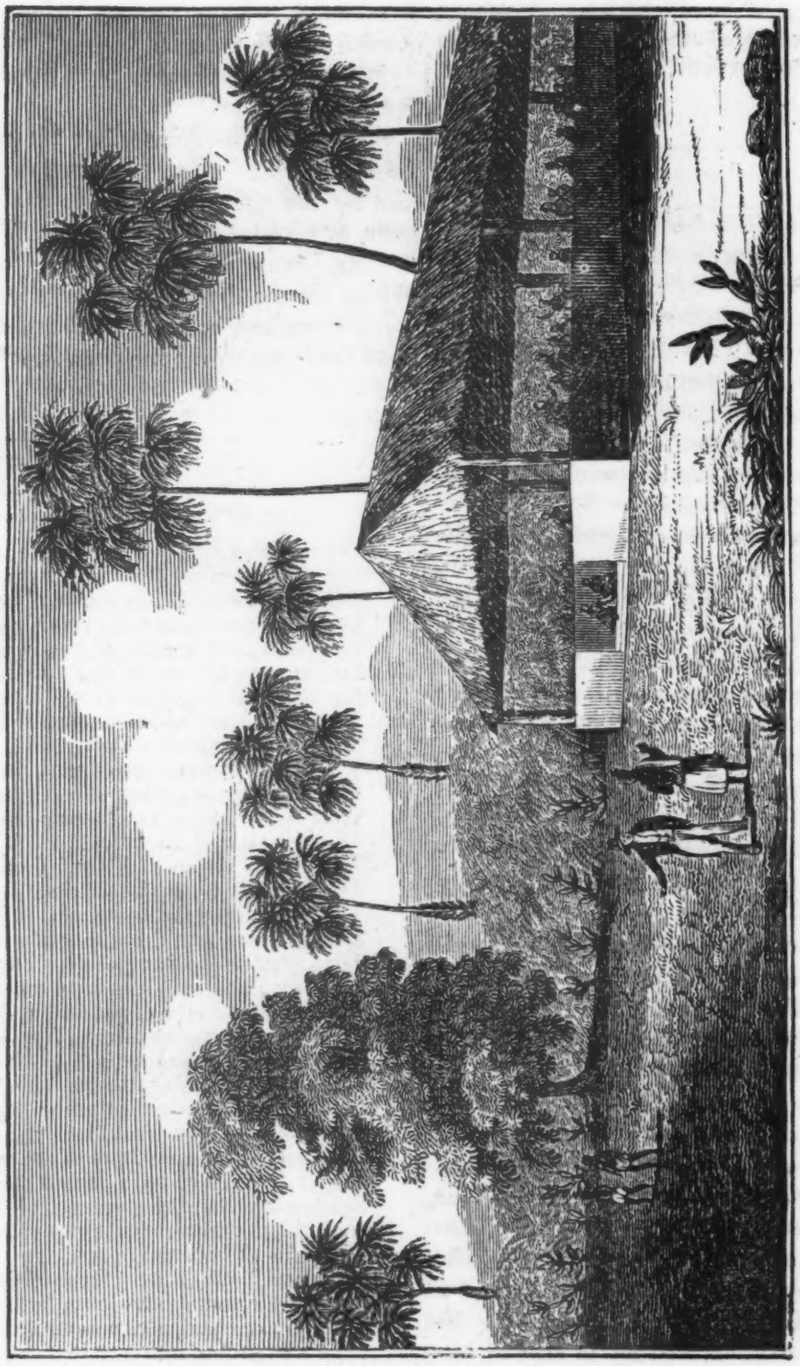
"Mr. John Bray, complains of Goody Fra White, for stealing of a silver spoon. The case being examined before the president Fra White fined for lying about the premises."

APRIL.—N. P. Willis.

I have found violets. April hath come on,
And the cool winds feel softer, and the rain
Falls in the beaded drops of summer-time.
You may hear birds at morning, and at eve
The tame dove lingers till the twilight falls,
Cooing upon the eaves, and drawing in
His beautiful bright neck, and, from the hills,
A murmur like the hoarseness of the sea
Tells the release of waters, and the earth
Sends up a pleasant smell, and the dry leaves
Are lifted by the grass; and so I know
That Nature, with her delicate ear, hath heard
The dropping of the velvet foot of Spring.
Take of my violets! I found them where
The liquid South stole o'er them, on a bank
That leaned to running water. There 's to me
A daintiness about these early flowers
That touches me like poetry. They blow
With such a simple loveliness among
The common herbs of pasture, and breathe out
Their lives so unobtrusively, like hearts
Whose beatings are too gentle for the world.
I love to go in the capricious days
Of April and hunt violets; when the rain
Is in the blue cups trembling, and they nod
So gracefully to the kisses of the wind.
It may be deemed too idle, but the young
Read nature like the manuscript of heaven,
And call the flowers its poetry. Go out!
Ye spirits of habitual unrest,
And read it when the "fever of the world"
Hath made your hearts impatient, and, if life
Hath yet one spring unpoisoned, it will be
Like a beguiling music to its flow, nm
And you will no more wonder that I love
To hunt for violets in the April time.

SONNET.—Park Benjamin.

To see a fellow of a summer's morning,
With a large foxhound of a slumberous eye
And a slim gun, go slowly lounging by,
About to give the feathered bipeds warning
That probably they may be shot hereafter,
Excites in me a quiet kind of laughter;
For, though I am no lover of the sport
Of harmless murder, yet it is to me
Almost the funniest thing on earth to see
A corpulent person, breathing with a snort,
Go on a shooting frolic all alone;
For well I know that when he 's out of town,
He and his dog and gun will all lie down,
And undestructive sleep till game and light are flown.



Schoolhouse at Ceylon.

SCHOOLHOUSE AT CEYLON.

THIS is the common schoolhouse for the village schools established by the missionaries of the American Board in Jaffna, except that, in some instances, there is no half wall, as here represented, and the whole consists of a thatched roof supported on six or eight posts, and having a hard floor of earth, on which the children sit cross-legged, and learn their lessons in classes, arranged under monitors. The child learns the alphabet by writing in the sand with his finger, guided by another child, until he is able to trace the outlines of the letter himself, under direction. Writing and spelling are afterward carried on together, the writing being first on the sand, and then on a palm-leaf with an iron stile—the leaf being held on the fore finger of the left hand by the thumb—and the stile grasped by two fingers on each side, while the thumb supports or holds it upright. In this manner the elements of the system of mutual instruction, which is called the Bell, Lancasterian, or British system, have long existed among the Tamulians, and were, indeed, borrowed from them by Dr. Bell, who had a school on this plan in Madras.

There are other beside school-bungalows. Every house of a single story, which has not a pent-roof, but is formed of four inclined planes descending to the eves on all sides, is, in India, called a *bungalow*—whether, as is common, the walls are built of mud, or of more solid materials.

The native houses are not, however, generally called bungalows, as they are, in most cases, mere huts, the walls of which are formed by

posts and laths of bamboo, plastered inside and out with clay; or mud-walled houses which are formed by throwing a narrow pent-roof over each of four walls, enclosing an area, so that on the outer and inner side of the walls, a space of six or eight feet is covered, while a few square feet in the middle of the area is open to the sky. Under the covered portion on the outside of the walls is formed a *verandah* or piazza all round, while the inside may be divided into rooms. But nearly the whole is usually left open to the interior, and if divided into separate apartments, it is only by mats or some other slight partition; the whole family often herding together, night and day, in one room, too much in the manner of the lower animals—a practice which introduces great licentiousness of manners.

In the engraving are represented one wild olive tree, and several palmyra trees; but the leaves of the latter should have been whole, and not divided, as each leaf is large, and very nearly resembles an open fan.

Tne natives represented in the engraving are dressed as the Tamulians generally are, with a single cloth tied round the waist, gathered up, as in the case of two of them, or else suffered to hang down, as in that of the other, something in the manner of a petticoat. The children of the schools dress in a similar way, having, whether boys or girls, only a piece of cotton round the middle, except that the larger girls sometimes receive from the missionaries a jacket, as a reward for their progress in study.

Should you visit one of these schools you would find the bungalow, probably, in the midst of a native village, under a grove of palms. If you are with a missionary or superintendent of the schools, the children, perhaps forty or fifty in number, begin, as they see you approach, to study aloud, and all at once to show their diligence. As you draw near, however, they become silent; and, when you enter, they rise and make their salutations. They then sit down, waiting to be examined in their lessons, and addressed on the subject of religion.

One half of the day is spent in the schools in Christian studies, as catechisms, Scripture history, and portions of the Bible. The older children are formed into Bible classes, and once a week brought together from the different schools to the station with which they are connected, and also on sabbath morning as a Sunday school. The Bible and religious tracts are made the principal reading books; and the children and teachers are not only required to attend church on the sabbath, but are often brought together at evening, and at other times, to hear preaching in the school bungalows. The parents of the children often attend on these occasions, and are more ready to receive instruction, because their children are benefited. The children are all examined once a month, and the *teacher is paid according to their progress.* The parents of the children and the neighbors sometimes attend these examinations, by which they are instructed, as they also are by the lessons which the children learn, and the books which they read at home.

The number of these schools has been for some years from eighty to ninety, embracing between three and four thousand scholars, about one sixth of whom are girls. The expense of a school of forty children for a year, not including their books, is about thirty dollars; if the books and other expenses are included, it will not be more than forty dollars, or one dollar a year for each scholar. Any of the schools may be wholly supported for fifty dollars a year. For so small a sum as one dollar a year, may the light of life be kindled up in the dark mind of a young Hindoo, and the way prepared for him to receive for himself and extend to others the blessings of salvation.

Though this article is not intended as a full account of the schools in Ceylon, it may be proper to say a few words concerning the boarding-school system, the object of which is to take children from their parents and friends, and bring them under the direct influence of the mission—to remove them in fact from a heathen to a Christian atmosphere. It was the greatest difficulty, at first, that children were obtained. They were anxious to learn English, which the missionaries offered to teach them, but they were afraid even to come into the mission houses, and a few took their lessons for some days from Mrs. Poor, at Tillipally, sitting in the door, while they stood without. A few poor boys at this station, and subsequently some at Batticotta, were, after a time, induced to come and take their food on the mission premises. In 1823, boarding-schools for boys and girls were in successful operation at all the five stations, and contained more than thirty girls and one hundred and twenty boys, supported by individuals and societies in America, who usually designated names to be given them. It was at this time found necessary, to secure the full benefits of the system, to have a high school for the more forward lads, and a central school for the girls, the former of which was soon commenced at Batticotta, and the latter at Oodooville.

Boarding-schools for boys in the elementary studies were continued for a time at each station, and then a preparatory school was formed for them at Tillipally. Now all are concentrated in the high school or seminary at Batticotta, which contains one hundred and forty-two lads instructed in English and the elements of science; of whom fifty-two have been received to the church, as were the greater part of forty-nine who had been previously graduated from the institution, and are now usefully employed in various situations. In the high school for girls twelve are members of the church; and twelve from this school, also in communion, have been married to Christian husbands, and are training up Christian families in the midst of the heathen.

Bigotry is just as amiable and as respectable in her indulgences as in her severities, in her partialities as in her persecutions. She deified most of the Roman emperors, and she has graced the calendar of saints with the names of many disgusting fools and villians.

ASTORIA.

THE following brief history of the *Pacific Fur company* and the settlement of Astoria on the Columbia river, is copied from a memoir by Robert Greenhow, and submitted to the twenty-sixth congress during its first session by Mr. Linn, chairman of a select committee on the Oregon territory:—

An association, for the prosecution of the fur trade on the northwestern side of the continent, was formed at New York in 1810. This association was called the *Pacific Fur company*. Its originator was John Jacob Astor, on whose commercial sagacity and efficiency it would be needless to dilate. He was, in fact, the company; one-half of its shares were held, nominally at least, by other persons, but every measure was dictated by him, and carried into effect by means of his capital. His plan was to establish trading-posts on the Columbia and its branches, as well as on the Pacific coasts and the head-waters of the Missouri, which were to be supplied with the necessary articles, either by way of the latter river, or from a principal factory, to be founded at the mouth of the Columbia, whither all the furs collected at the other places were, at stated periods, to be brought. The principal factory was to receive goods by ships sent out annually from New York, which, having discharged their cargoes at the mouth of the Columbia, were to be reladed with furs for Canton, whence they would carry back to New York teas, silks, and other Chinese productions. It was also contemplated that the Russian settlements on the Pacific should be furnished by the company's vessels with such foreign articles as they required, furs being taken in exchange; and, in order to effect this more completely, as well as to prevent the occurrence of difficulties, which might otherwise be anticipated, an agent was despatched to St. Petersburgh, who concluded an arrangement securing to the Pacific company, under certain conditions, the exclusive privilege of trading with the Russian American possessions.

For the execution of these plans, Mr. Astor engaged, as partners in the concern, a number of persons, nearly all Scotchmen, who had been long in the service of the Northwest company, together with some Americans and Canadians, who were acquainted with the fur trade. These partners were to conduct the business in the west, under the direction of a general agent, chosen by them for five years; and they were to share among themselves one half of the profits, the other half being retained by Mr. Astor, who advanced all the funds, and superintended the affairs at New York. The persons required for the inferior offices and employments having been also engaged, the first party quitted New York for the Columbia in September, 1810, in the ship Tonquin, commanded by Jonathan Thorne: in January following, the second detachment set out from St. Louis, on its way across the continent, under the direction of Wilson Price Hunt, of New Jersey, who had been appointed general agent by the board of partners. The ship Enterprise, Captain Ebbets, had also been sent in 1809 to the North Pacific, to make preparatory researches and inquiries among the Russian settlements, and on the coasts which were to be the scenes of the new company's operations.

The Tonquin arrived at the mouth of the Columbia in March, 1811; and, her goods and passengers having been there landed, she sailed toward the north in search of furs. Before her departure, a spot was chosen on the south bank of the river, eight miles from the ocean, as the site of the principal factory, which, in compliment to the originator of the enterprise, was named *Astoria*. In the course of the ensuing summer, the most essential buildings were erected, gardens were planted, trade was begun with the natives, a small vessel was built and launched, and everything appeared to promise success to the establishment.

In July a detachment of persons in the service of the Northwest company arrived at Astoria, under the direction of Mr. Thompson, the astronomer of that association, who had left Montreal in the previous year, with the object of anticipating the new company in occupying the mouth of the Columbia. On their way down, they built huts and hoisted flags, and bestowed names on various spots, by way of *taking possession*, as they considered it, of the territory of their sovereign. They, however, arrived too late at the most important point; and were obliged to retrace their course to the northward, having been received and treated with great attention at the factory by their old friends, Messrs. M'Dougall, Mackay, and Stuart, the partners of the Pacific company, then directing its affairs in the west. From the information which has been obtained, it appears to be certain that by this party were established the first British trading-posts on the Columbia; and that they were, indeed, the first white men who ever navigated the northern branch of that river.

In the course of this summer, also, several trading-posts were established by the Pacific Fur company in the interior of the country; of which, the principal was one situated at the confluence of a river, called the Okanagan, with the Columbia, about four hundred miles from the mouth of the latter. During the winter which followed, the people of Astoria were subjected to many discomforts, but nothing occurred calculated to lessen their hopes as to the ultimate success of the undertaking.

Meanwhile, the other party of the Pacific company's men, proceeding from St. Louis, under Mr. Hunt, ascended the Missouri, to the country of the Arickara Indians, near the great bend of the river, and thence pursued their journey by land to the Rocky mountains. After passing this ridge, near the forty-fifth degree of latitude, they descended one of the branches of the Lewis (probably that now called *Salmon river*), to the Columbia, and reached Astoria in the spring of 1812, having undergone innumerable difficulties from cold, fatigue, and want of food. Scarcely

had they arrived at the factory, when news was received of the destruction of the ship Tonquin and her whole crew, with the exception of the Indian interpreter, at one of the inlets near Nootka sound; the crew were overpowered by the savages, who killed the greater part of them immediately, and the vessel was then blown up by the clerk and others who had taken refuge in the hold. This disaster was calculated to depress the hopes of the persons engaged in the enterprise; their courage, however, appears to have been undiminished, and they pursued their labors diligently, being confident that the company (that is to say, Mr. Astor) could bear much heavier pecuniary losses without injury to its credit.

In May, 1812, the Astorians were still farther encouraged, by the arrival of the ship Beaver from New York with supplies and reinforcements; and it was determined (unfortunately for the cause, as will afterward appear) that Mr. Hunt should sail in her to the northern coasts, and visit the Russian settlements, in order to see what commercial intercourse could be carried on with them. He accordingly took his departure in that vessel in August, leaving the affairs of the factory under the direction of Mr. Duncan M'Dougall, one of the Scotch partners, who had been so long in the service of the Northwest company.

In January, 1813, the news of the declaration of war by the United States against Great Britain reached Astoria, where it was brought by persons sent for the purpose from New York; and, in the course of June following, Mr. M'Tavish, one of the partners of the Northwest company, arrived at the factory from Canada, bringing rumors of the approach of a British naval force to take possession of the mouth of the Columbia. These announcements appear to have been received with satisfaction by Mr. M'Dougall and his brother Britons, three of whom (including Ross Cox, the author of *Six Years on the Columbia*), immediately quitted the service of the Pacific company, and entered that of the rival association; while the others almost unanimously agreed to abandon the enterprise, unless they should speedily receive assistance and supplies from New York.

From New York, however, nothing came. The ship Lark had been despatched by Mr. Astor with articles and men for Astoria; but she was wrecked near the coast of one of the Sandwich islands, in the latter part of 1813. The government of the United States had also determined, in consequence of Mr. Astor's representations, to send the frigate Adams to the north Pacific, for the protection of the infant settlement; but, just as she was about to sail from New York, it became necessary to transfer her crew to Lake Ontario, and the blockade of the American ports by British fleets rendered all farther efforts to convey succors to Astoria unavailing.

Soon after the partners of the Pacific company had formed the resolution, as above mentioned, to abandon the concern unless they should receive assistance, Mr. Hunt, the chief agent, returned to Astoria in the ship Albatross. He had spent the summer of 1812 in visiting the Russian settlements at Sitca, Unalashka, and Kodiah, and had collected a valuable cargo of furs, which were carried to Canton in the Beaver. Hunt, however, accompanied that ship no farther than to the Sandwich islands, where he was informed of the war between the United States and Great Britain; and, being anxious to convey the news without delay to Astoria, he chartered the ship Albatross of Boston, which was then lying at Wahoo, and proceeded in her to the Columbia. He was at first astounded at the resolution adopted by the other partners, but he was at length induced to concur with them as to its propriety; and, after remaining a few days, he again sailed to the south Pacific, in the Albatross, for the purpose of finding some ship to convey the furs, then stored in the factory, to Canton. At Nooahevah (one of the Washington islands, discovered by Ingraham, in 1791), he learned that a British squadron, under Commodore Hillyer, was on its way to the Pacific, in order to occupy the mouth of the Columbia; upon receiving this news, he hastened to the Sandwich islands, and, having there chartered the American brig Pedlar, he sailed in her for Astoria, where he arrived on the twenty-eighth of February, 1814.

The fate of the Pacific company, and of its establishments in Northwest America, had, however, been decided ere the arrival of the Pedlar in the Columbia.

On the seventh of October a body of men in the service of the Northwest company came down the river to Astoria, under the direction of Messrs. M'Tavish and Stuart. They arrived without either ammunition or provisions, while the people of the factory, who nearly equalled them in number, were well supplied in every respect, and their fortifications and heavy guns would have enabled them to withstand any attacks which might have been anticipated under ordinary circumstances. The new-comers, however, brought information, upon which the partners at Astoria could depend, and which proved to be perfectly correct, that a large armed ship, the *Isaac Todd*, had been fitted out at London, by the Northwest company, and was on her way to the Columbia, under convoy of a frigate, *with the object of taking and destroying everything American* in that quarter. Messrs. M'Tavish and Stuart, on communicating this news, to which they added accounts of the complete blockade of the coasts of the United States by British squadrons, at the same time proposed to purchase the whole of the establishments, furs, and other property of the Pacific company, in the territory of the Columbia, at prices to be fixed by common consent; they also offered to engage in the service of the Northwest company any of the persons attached to the American concern, at the same wages which they were then receiving, and to send back to the United States such as might not choose to be thus employed. To these propositions the partners at Astoria resolved to assent; and an agreement was accordingly signed, between them and the chiefs of the other

party, on the sixteenth of the month, by which "*all the establishments, furs, and property*," above mentioned, were sold to the Northwest company for about forty thousand dollars, given in the shape of bills on Montreal.

The business appears to have been managed, on the side of the Pacific company, almost entirely by Mr. M'Dougall, whose conduct on many occasions, during the transaction, as well as afterward, was such as to induce suspicions that he was actuated by improper motives of self-interest. It is, however, difficult to determine what other course ought to have been pursued by him and the other partners, under existing circumstances. They might, indeed, have held out their stockaded fort against the enemy, or have effected a retreat with their property to some place in the interior; but this would have been to no purpose, while they could expect neither to receive supplies of goods for trading from the United States, nor to send their furs for sale to Canton. Mr. Astor declares that he would have preferred the loss of the place and property by a fair capture to a sale which he considered disgraceful; and those who know him well are convinced that he speaks as he feels. But mercantile men are, in general, supposed to consider discretion among their agents as the better part of valor; and M'Dougall may have reasonably considered himself bound to act rather for the interests than for the glory of the Pacific company.

While the business of the transfer of the furs and merchandise at Astoria was in progress, the British sloop-of-war Rackoon entered the Columbia, under the command of Captain Black, who had hastened thither in hope of securing a rich share of plunder by the capture of the fort and magazines of the Pacific company. He found the flag of the United States waving over the factory, which was surrendered, immediately on his appearance, by the chief agent M'Dougall; but the furs and goods which were to reward himself and his crew for their exertions, had become the property of their own fellow-subjects, and were then floating up the river in the barges of the Northwest company. The captain of the Rackoon could, therefore, only lower the flag of the United States, and hoist that of Britain over the factory, the name of which he at the same time, and with *due solemnity*, changed to Fort George. These duties being completed, he took his departure for the south.

Three months afterward (that is, on the twenty-eighth of February, 1814), Mr. Hunt arrived at the Columbia in the brig Pedlar, which he had, as already stated, chartered for the purpose of conveying the property of the Pacific company to Canton. He found Mr. M'Dougall in charge of the factory, not, however, as an agent of that company, but as a partner of the Northwest company, into which he had been already admitted; and Hunt had, therefore, merely to close the concerns of the former association in that part of America, and to receive the bills given in payment for its effects. Having done this, he re-embarked in the Pedlar; and, taking with him three of his former companions in trade, he sailed for the United States, by way of Canton. Of the other persons who had been connected with this enterprise, some engaged in the service of the Northwest company, and some returned across the continent to the United States.

Such was the termination of the Astoria enterprise, for no attempt has been since made by the Pacific company, or by any of its members, to form a trading establishment on the northwest coast of America. The scheme was most wisely projected, and its failure can scarcely be attributed to any circumstances, the occurrence of which might have been anticipated when its execution was begun. That ships might be lost at sea, and that the adventurers might suffer from cold, or hunger, or the attacks of savages—casualties such as those were to be expected, and provision was made against them; but in 1810, when the Tonquin sailed from New York, no one anticipated that before the end of two years the United States would have been at war with the most powerful maritime nation in the world. The war traversed every part of the plan. Communications between the ports of the United States and the Columbia by sea, were rendered difficult and uncertain; while those by land were of little advantage, and were liable to interruption by the Northwest company; beside which, the furs could no longer be transported with safety to Canton. Moreover, all the most active and skilful persons in the employment of the Pacific company, except Mr. Hunt, were British subjects, whose feelings of attachment for their native land and its cause naturally rendered them discontented, when they were thus placed, in a manner, conspicuously among the ranks of its enemies. If Mr. Astor may be considered as having acted imprudently in any part of his arrangement, it was certainly in engaging so large a proportion of persons unconnected with the United States by birth, citizenship, or feelings, in the formation of establishments which were so essentially American in character and objects. That those establishments should have fallen, must be a subject of regret to every American, as there can be little if any doubt that, had they been maintained until the termination of the war, the enterprise would have succeeded, and the whole region drained by the Columbia would now be in the quiet and undisputed possession of the people of the United States.

It will be interesting, if not useful, here to insert the account of the capture of Astoria, as related by Ross Cox, who received his information at the place, shortly after the event:—

"Captain Black took possession of Astoria in the name of his Britannic majesty, and rebaptized it by the name of 'Fort George.' He also insisted on having an inventory taken of the valuable stock of furs, and all other property purchased from the American company, with a view to the adoption of ulterior proceedings in England for the recovery of the value from the Northwest company; but he subsequently relinquished this

idea, and we heard no more about his claims. The Indians at the mouth of the Columbia knew well that Great Britain and America were distinct nations, and that they were then at war, but were ignorant of the arrangement made between Messrs. M'Dougall and M'Tavish, the former of whom still continued as nominal chief at the fort. On the arrival of the Rackoon, which they quickly discovered to be one of 'King George's fighting ships,' they repaired armed to the fort, and requested an audience of Mr. M'Dougall. He was somewhat surprised at their numbers and warlike appearance, and demanded the object of such an unusual visit. Comcomly, the principal chief of the Chinooks (whose daughter M'Dougall had married), thereupon addressed him in a long speech; in the course of which he said that King George had sent a ship full of warriors, and loaded with nothing but big guns, to take the Americans and make them all slaves, and that, as they (the Americans) were the first white men who settled in their country, and treated the Indians like good relations, they had resolved to defend them from King George's warriors, and were now ready to conceal themselves in the woods close to the wharf, whence they would be able with their guns and arrows to shoot all the men that should attempt to land from the English boats, while the people in the fort could fire at them with their big guns and rifles. This proposition was uttered with an earnestness of manner that admitted no doubt of its sincerity; two armed boats from the Rackoon were approaching, and, had the people in the fort felt disposed to accede to the wishes of the Indians, every man in them would have been destroyed by an invisible enemy Mr. M'Dougall thanked them for their friendly offer; but added, that, notwithstandstanding the nations were at war, the people in the boats would not injure him or any of his people, and, therefore, requested them to throw by their war-shirts and arms, and receive the strangers as their friends. They at first seemed astonished at this answer; but, on assuring them in the most positive manner that he was under no apprehensions, they consented to give up their weapons for a few days. They afterward declared they were sorry for having complied with Mr. M'Dougall's wishes; for when they observed Captain Black, surrounded by his officers and marines, break the bottle of port on the flagstaff, and hoist the British ensign after changing the name of the fort, they remarked that, however we might wish to conceal the fact, the Americans were undoubtedly made slaves; and they were not convinced of their mistake until the sloop-of-war had departed without taking any prisoners."

ANCIENT SCULPTURE

In Egypt the art of sculpture assumed a magnificence commensurate with all other efforts of this singular people, which were ever upon a grand scale. Nor did this grandeur and magnificence of the art at all prevent that nicety of finish which we expect in objects of small size, for their statues, which were formed by the chisel, were polished with the greatest care in all their parts. Even those that stood upon the pinnacles of temples, or the summits of obelisks, and could only be viewed at a distance, were finished with as much labor as if they were designed for close and minute inspection. One of the finest specimens of their sculpture extant is the head of the statue of Memnon, now in the British museum, whither it was taken by that indefatigable traveller and ripe scholar, Belzoni. To give

Head of Memnon.

the reader an idea of the immense size of Egyptian statues, we will note some of the principal dimensions of the one in question. We would remark, however, that this is lilliputian, compared to some of their immense sphynxes which guarded the entrance to the principal temples of Thebes.

The whole height of the bust from the top of the head-dress to the pit of the stomach, ...	8 ft.	9 in.
Round the shoulders and breast above, ...	15	3
From the upper part of the head-dress to the end of the beard, .	6	0½
From the forehead to the chin,	3	3½

Nor was the human form alone represented of colossal size by the Egyptians, but animals also were hewn from stone, of good proportions, but far exceeding the dimensions of nature. The Egyptians and Hindoos were both in the practice of placing colossal statues of lions, or some other formidable animal at the entrance of their temples, by which the worshipper was overawed and rendered servile to the impositions of the priests. Adallatif, an Arabian writer, describes two lions of terrific size and appearance that stood at the gates of Memphis, and at this day the remains of these animals of colossal propor-

tions may be seen at the principal entrance-gate to the ancient city of Luxor, in the vicinity of Thebes.

All the larger figures in Egyptian sculpture were generally executed in calcareous stone, basalt, granite, and alabaster. No evidence has yet been produced that they ever made use of bronze, and it is probable that this is of comparatively modern invention, or rather was not used until the art had attained considerable eminence in Greece. Many of these larger statues were painted, so that the color should produce a nearer resemblance to the object intended to be represented. It is said that on the face of the great sphynx near Memphis, paint is still discernible, also on one of the colossal statues attached to the front of the temple of Ipsambul.

The Phenicians, Tuscans, and Persians, probably preceded the Greeks in the cultivation of the various arts which distinguished Egypt. The Babylonians, who, like the Egyptians, worshipped images, also made them of colossal size. That which Nebuchadnezzar "set up" in the centre of the plain of Dura, was "an image of gold, whose height was threescore cubits (about one hundred and ten feet), and the breadth thereof six cubits" (about eleven feet). Herodotus also tells of a statue, twenty-two feet high, of solid gold.

The Phenicians had the advantage of well-formed persons as an aid in the successful prosecution of the art of sculpture, and the wealth and refinement which their commercial habits added, were powerful auxiliaries to their natural industry in carrying the art to great perfection. But those destructive Roman invasions which levelled Carthage, the city of the Phenician remnant, to the earth, and blotted it out from the calendar of nations, destroyed every vestige of Phenician art except a few well-executed coins that have been exhumed from the ruins of Tyre, Sidon, and Carthage.

The Persians made but little progress in the art of sculpture, for they had not the powerful influence of religious feeling as an incentive. They worshipped fire as an emblem of Deity, and considered it impious to represent him in any material form, especially the human. This being the case, almost the only motive for a cultivation of the art, was taken away, and the chisel was employed only in basso-relievo works, in the adornment of temples and military monuments. At Persepolis are found many specimens of sculpture of this character, and among ruins in the vicinity of this ancient city are bas-reliefs representing military movements.

The Etrurians or ancient Tuscans, cultivated the art, and carried it to a considerable degree of perfection, earlier than the Greeks; and it is probable that through these former, the latter received a knowledge of it from the Egyptians and Phenicians. The art is said to have been introduced into Etruria, by Dædalus, who lived three generations before the Trojan war, which. according to the most authentic chronology, was about fourteen hundred years before the Christian era. This artist, it is said, offended Minos, king of Crete, and was obliged to take refuge in Sicily. Thence he passed into Etruria, where he spread a knowledge, and left monuments of his art and genius. Pausanias avers that he had seen many statues ascribed to this artist. His principal works were large statues formed of cypress-wood; and so durable were they, that they survived till the general destruction of everything connected with the fine arts in Etruria, was effected by the Roman emperors.

The Etruscans were a powerful state more than two hundred years prior to the founding of Rome, and were probably the authors of the principal works of art known among the Romans in the first ages of their existence. They carried the art of sculpture to a considerable degree of perfection; and if it be true, as Pliny asserts, that statues of Romulus, Numa, Tarquinus Priscus, and Servius Tullius, were all executed in their respective times, the Etruscans were undoubtedly the sculptors employed in the work. The annexed cut represents one of the earliest specimens of their sculptures extant. It was found in the tombs mentioned in another part of this work, and its date is assigned to about the year 1100 B. C. After the Romans became a powerful people, the Etruscans were still their artists. During the first years of the republic they introduced among them statuary formed of terracotta (a kind of plaster-work), of which a large statue of Hercules was made. The Etruscan style is similar to that of the Egyptians or earlier Greeks, from whom they received it.

When the art of sculpture was first introduced into Greece, the taste for the colossal there prevailed. Pausanias mentions the fact that statues thirty feet high and upward, were not at all uncommon. At Elis, the people set up a statue of Jupiter, sixty feet high, in the Altes or sacred grove near Olympia, the reputed residence and throne of the Thunderer. On the banks of the Apheus, a statue of the same deity was erected, sixty feet high, and formed of cryselephantine stone. This material was most commonly used by the Greeks for their colossal statues, although marble was sometimes brought into requisition, and more frequently, metals and wood. But of all the gigantic works of art, the statue dedicated to the sun at Rhodes, was the most remarkable, and formed one of the seven wonders of the world.

This immense statue was raised by the Rhodians in honor of Apollo (the sun), who, according to ancient fable, delighted in Rhodes more than in any other part of the earth, because there a day never passed, but the sun shone out in splendor upon the city and the surrounding sea. The immediate cause of the erection of this statue, is said to be the gratitude which the Rhodians felt toward Apollo and Ptolemy Soter of Egypt jointly, in enabling them to withstand

a siege by Demetrius, king of Macedonia. As soon as the enemy retired from the investment of the city, they resolved to erect a brazen statue of the sun, and at once employed Chares, the disciple of Lysippus, to execute the project. He made a contract to build it for a certain sum, but when it was only half completed, his money was all spent, and he hanged himself in despair. Laches, his fellow-countryman, was employed to complete it, which he did in three olympiads (twelve years), and placed it upon the pedestals. The height of the statue is variously estimated; the lowest being one hundred feet and the highest, one hundred and thirty. According to Pliny, who lived at the time it was in existence, though prostrate, it was one hundred feet high. It was placed at the entrance of the harbor at Rhodes, with its feet upon a rock on each side. Vessels passed with ease between its legs into the harbor. Its fingers were equal in length to the whole of a common statue, and very few persons could embrace its thumb with their arms. Scarcely sixty years had elapsed before this monster of art was thrown down by an earthquake, and partly broken to pieces. When, in the year 684 of the Christian era, the Saracens conquered Rhodes, this statue (which was of brass) was beaten to pieces and sold to a Jew merchant, who loaded more than nine hundred camels with the metal.

In addition to the Olympian Jupiter before mentioned, and which was constructed by Phidias, the greatest sculptor of antiquity, this artist erected a statue of Minerva in the Parthenon, which was thirty-nine feet in height, erect, and clothed in a tunic. In her hand she brandished a spear, and at her feet lay a buckler and a dragon of admirable execution, supposed to represent Ericthorius. On the middle of her helmet a sphynx was carved, and on each of its sides a griffin. On the ægis were displayed a Medusa's head and a figure of Victory. Among other colossi of the ancients, were a statue by Lysippus at Tarentum, which was upward of seventy feet in height; the Jupiter of Leontine in Sicily, thirteen feet in height, and several of similar size, which adorned Rome in her palmiest days.

Anterior to Phidias, several eminent sculptors appear in the list of Grecian artists. The first that is mentioned is Dipœnus and Scyllis of Sicyon, in Crete, who flourished about six hundred years before the Christian era. Next was Batthycles, who lived in the time of Solon, the great Grecian lawgiver. From this period, or from the reign of Pisistratus, until the epoch of the liberty of Athens, the art flourished considerably. Learchus of Rhegium made at Sparta, a statue of Jupiter, formed of bronze;* Doryclidas, a Themis, for the temple of Jupiter, and for the same temple, his brother Medon made a Minerva; Dontas, a group, representing the combat between Hercules and Achelous—the former protected by Minerva, the latter by Mars; and Theocles made Hesperides both in brass and gold. Bupalus and Anthermus flourished about the year 500 B. C. Subsequently to those already mentioned, we find the names of Damea, Calon, Laphore, and others of less note. Although these made considerable improvements, yet none of them attained to that excellence which might entitle them to a place in the higher ranks of Grecian art.

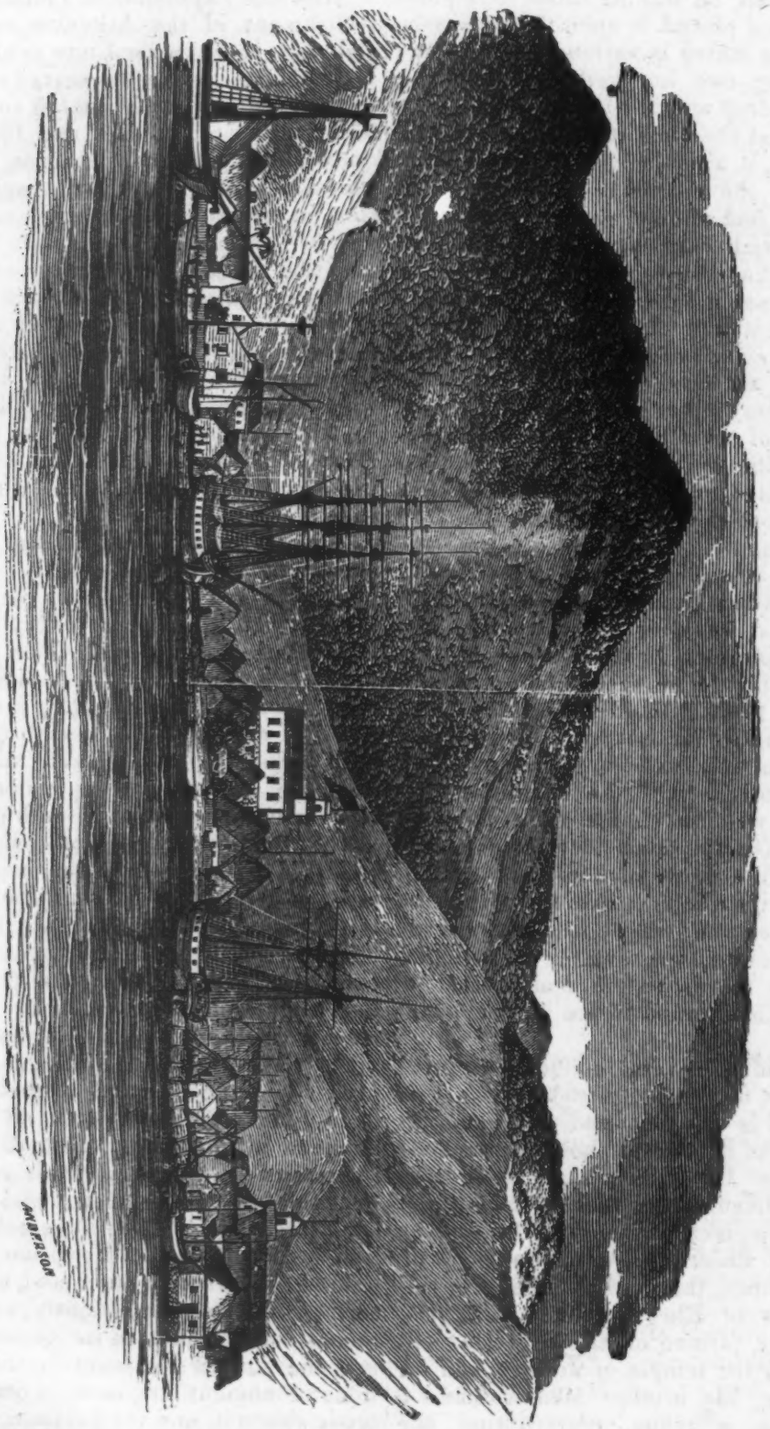
After the expulsion of Pisistratus, and the establishment of the Athenian republic, new life and vigor were infused into every department of civil life, and the arts received a mighty impetus in their already rapid march toward perfection. The battles of Salamis and Platæ decided the question of permanent success, and everywhere the skill of the artist was brought into requisition, in erecting statues and temples to the gods and to heroes. At this period flourished Ageladas, the master of Phidias, and Pythagoras of Rhegium, who first expressed in marble, the nerves, veins, and arteries of the human body, and who excelled all of his predecessors in the representation of the human hair. About this time, also, flourished Simon and Onatas, of Ægina, and Calamis and Dionysius of Argos. With these ends the *ancient* epoch of the art, and we are now to consider it in its palmiest state in the time of Pericles.

When Phidias appeared, the political and social condition of his country was such as afforded the greatest facilities for the promotion of the fine arts, and indeed everything of a refined and intellectual nature. The people were not only unburdened of the weight of tyrannical oppression, but the republic was rich with the spoils of victory. The overthrow of the Persian army under Xerxes, poured immense treasures into their coffers, and as, according to custom from time immemorial, a tenth part of the spoils of the vanquished belonged to the gods, immense wealth was employed in the erection and adornment of temples. Under Pericles, Athens grew into a magnificence and beauty, altogether unparalleled. The splendid Parthenon arose upon the summit of the Acropolis, and paintings and statuary adorned its interior in great profusion. Heroes, men of military renown, such as Alcibiades, Themistocles, Miltiades, &c., were honored by statues erected to their memories, and a religion which pervaded all classes and influenced all their acts, claimed the homage of the artists' genius. All these combined, gave a new impulse to the sister arts of painting and sculpture, and into the huge colossal and spiritless creations of the Egyptian art, the Greeks poured all their sense and soul, and inspired their statues with heroism, majesty, and beauty. The human form, which, in its perfection, fell far below the standard of man in the heavy productions of ancient art, now, in its representation, arose above it, and the passions of vitality seemed to gleam forth from the cold marble. Their hills, their groves, and their fountains, teemed with statues of nymphs and gods, and in their cities heroes stood upon every side, as sublime records of Grecian glory.

* This is the first authentic notice of this material having been used in statuary.

Nor was the art confined to the hills and valleys, cities and temples of Greece, but on the Syrian palaces and fanes, in the temples of the Idumean desert, the traveller now meets vestiges of Grecian art. Wherever the Greek language was known and uttered, the songs of Homer were chanted, and these songs were but eulogies of the Grecian mythology, or of Grecian heroes. Their influence was felt with a conquering power, and nations invulnerable to Grecian arms, embraced her beautiful and sublime religion, and filled her temples in their eagerness to consult her oracles.

Outline History of the Fine Arts.



Honolulu, in the Sandwich Islands.

HONOLULU, IN THE SANDWICH ISLANDS.

That group called the Sandwich islands has always been regarded with interest ever since their discovery by Captain Cook, in 1778, and the description given of them in the history of his voyages. His unfortunate and tragical death there cast a gloom over them for many years, so that the name of the group generally excited in the mind ideas of most irreclaimable barbarism. The public, however, have long since learned to

regard the Sandwich islands with very different associations: for they have been the scene of a moral revolution of a most extraordinary character, the beginning of which was unprecedented in modern times, and naturally led the mind to the days of the apostles, which alone appear to have afforded any parallel.

It is now only about fifteen years, since a few missionaries sailed from this country, to attempt to teach the inveterate idolaters of that group of islands the true religion, at the supposed risk of their lives; but, to their astonishment, they found, on their arrival, that the people had risen with one accord against their own false and debasing system—thrown their images into the sea, and welcomed them on shore with acclamation. With many an interesting step in their subsequent improvement, our readers are generally acquainted, as well as with numerous sketches of characters, manners, and habits, which have been improved by the influence of bibles, teachers, and schools. Some of the striking natural productions and scenery of that remarkable region, have also been so accurately described by successive works, published by American and English missionaries, that we feel in a considerable degree familar with them.

The village of Honolulu stands on the harbor of that name in Oahu (pronounced O-ah-hoo), one of the eleven islands which form the Sandwich group. It stands at the foot of high mountains, and partly in a narrow valley between them, while another of much superior elevation, is seen rising to the clouds in the interior.

The descriptions given of this island are among the most glowing we find in any authentic writings. Enjoying a climate analogous to that of the West Indies, yet happily free from their hurricanes, with a soil of volcanic richness, and often of great depth, loaded with a wonderful variety of choice plants, flowers, and fruits, the landscape no less abounds in scenes of sublime and picturesque beauty, than with attractions for the palate, brilliant hues, and fragant perfumes.

Among the valuable plants peculiar to this and a few other groups in the Pacific ocean, the taro and bread-fruit trees are distinguished, which are said to be of a superior quality in the Sandwich islands. Sugar-cane also thrives with remarkable vigor, having been known to attain the circumference of eleven inches.

Among the low buildings which form the habitations of the natives, may be seen a few residences of missionaries and other foreigners. In the midst, in a conspicuous situation, is the Seamen's chapel, built and supplied with a chaplain by the American Seaman's Friend society. The ship-of-war, which lies at anchor a little to the left, may represent one of the vessels of our navy, numbers of which have visited this harbor, in their cruises in the Pacific.

An upright posture is easier than a stooping one, because it is more natural, and one part is better supported by another; so it is easier to be an honest man than a knave.

REVOLUTIONARY REMINISCENCES.

CAPTURE OF VINCENNES OR VINSENNE.

This brief account of the capture of Vincennes by a small party of Americans, on the fifth of February, 1779, is copied from a published speech recently delivered by Judge Law, before the Historical Society of Vincennes. This is one among hundreds of similar events, that occurred during the War of Independence, when small numbers of men achieved great and important victories, and when correspondence and action were generally laconic in the extreme. We will thank such of our readers, who may possess unpublished historical facts of a similar nature, if they will forward them to us. Such isolated facts as these are to compose the materials out of which the future American historian will be able to give additional value and interest to his glowing narrative of our early history as a nation.

"It was on the fifth of February, 1779, that a Spartan band of one hundred and seventy men, headed by as gallant a leader as ever led men to battle, crossed the Kaskaskia river, on their march to this place. The incidents of this campaign, their perils, their sufferings, their constancy, their courage, their success, would be incredible, were they not matters of history. In my opinion, as I have before remarked, no campaign either in ancient or modern warfare—taking into consideration the force employed, the want of material, the country passed over, the destitution of even the necessaries of life, the object to be accomplished, and the glorious results flowing from it, is to be compared to it. And what is even yet more astonishing, is the fact, that a battle which decided the fate of an empire, a campaign which added to our possessions a country more than equal in extent to the United kingdoms of Great Britain, Scotland, and Ireland, has scarcely even a page of our revolutionary annals devoted to its details, or making even honorable mention of the brave and gallant men who so nobly and successfully conducted it.

Time would fail me, and your patience would be perhaps exhausted, were I to follow step by step, and day by day, this small, but brave, devoted, patriotic, and chivalrous corps, through the wilderness from Kaskaskia to this place. It would be but a repetition of daily sufferings, of fatigue, of peril, of constancy, of perseverance, and of hope. Day after day, without provisions, wading in ice and water to their necks, through the overflowed bottoms of the Wabash, carrying their rifles above their heads, their gallant chief taking the lead, foremost in difficulty and in danger, did these patriotic soldiers struggle on, faint, weary, cold, and starving, until the prize was in view, and their object was accomplished. Look around you my friends, and see what this portion

of our beloved Union is now. Look ahead, and tell me, if you can, what is to be a half century hence, supposing the improvements to progress as they have the last twenty years—and the advancement will be geometrical—and then go back with me sixty years since, *this very day*, and learn from an actor in the scene—one holding command, and from whose unpublished journal I make the extract, what the country was, and the difficulties and dangers, perils and sufferings, those endured who conquered it for you, and yours: and should you, or those who are to come after you, to the latest generation, forget them, "may your right hands forget their cunning."

"February twenty-second, 1779. Colonel Clark encouraged his men, which gave them great spirits. Marched on in the water; those that were weak and famished from so much fatigue, went in the canoes. We came three miles farther to some sugar-camps, where we stayed all night. Heard the evening and morning guns at the fort. No provisions yet. THE LORD HELP US.

"Twenty-third. Set off to cross a plain called Horseshoe plain, about four miles long, all covered with water breast high. Here we expected some of our brave men must certainly perish, the water having froze in the night, and so long fasting. Having no other resource but wading this lake of frozen water, we plunged in with courage, *Colonel Clark being first*. We took care to have boats by, to take those who were weak and benumbed with the cold into them. Never were men so animated with the thought of avenging the ravages done to their back settlements, as this small army was. About one o'clock we came in sight of the town. We halted on a small island of dry land, called 'Warren's island,' where we took a prisoner hunting ducks, who informed us that no person suspected our coming in that season of the year. Colonel Clark wrote a letter by him to the inhabitants, as follows:—

"*To the Inhabitants of Post Vincennes:—*

"GENTLEMEN: Being now within two miles of your village with my army, determined to take your fort this night, and not being willing to surprise you, I take this method of requesting such of you, as are true citizens, and willing to enjoy the liberty I bring you, to remain still in your houses. And those, if any there are, that are friends to the king, will instantly repair to the fort, and join the HAIR-BUYER GENERAL, and fight like men. And if any such as do not go to the fort, shall be discovered afterward, they may depend on severe punishment. On the contrary, those who are true friends to liberty, will be well treated.

G. R. CLARK."

In order to give effect to this letter, by having it communicated to the French inhabitants, the army encamped until about sundown, when they commenced their march, wading in water breast high, to the rising ground on which the town is situated. One portion of the army marched directly up along where the levee is raised, and came in by the steam-mill. While another party under Lieutenant Bradley, deployed from the main body, and came in by the present Princeton road. An entrenchment was thrown up in front of the fort, and the battle commenced from the British side by the discharge, though without effect, of their cannon, and the return on our side of rifle-shot—the only arms the Americans possessed. On the morning of the twenty-fourth, about nine o'clock, Colonel Clark sent a flag of truce, with a letter to the British commander, during which time there was a cessation of hostilities, and the men were provided with a breakfast—the *first meal which they had had since the eighteenth, six days before*. The letter of Clark is so characteristic of the man, so laconic, and, under such trying circumstances, shows so much tact, self possession, and firmness, that I will read it:—

"SIR: In order to save yourself from the impending storm that now threatens you, I order you *immediately* to surrender yourself, with all your garrison, stores, &c., &c. For if I am obliged to storm, you may depend on such treatment as is justly due to a *murderer*. Beware of destroying stores of any kind, or any papers or letters that are in your possession, or hurting one house in town. For, by heaven, if you do, there shall be no mercy shown you.

"G. R. CLARK.

"Governor HAMILTON."

The reply of Hamilton to this singular epistle shows he was already quailing.

"Governor Hamilton begs leave to acquaint Colonel Clark, that he and his garrison are not disposed to *be awed* into any action unworthy British subjects."

The battle was renewed; the skill of our western riflemen, celebrated even in those days, wounded several of the men in the fort through the port holes, the only place where a shot could be made effective. Clark with the skill of a practised commander, must have seen and felt from the answer returned to his communication, that another message would soon be delivered to him from the same quarter; and he was not long in receiving it. The flag of truce brought him as follows:—

"Governor Hamilton proposes to Colonel Clark a truce for three days, during which time he promises, that there shall be no defensive work carried on in the garrison, *on condition*, that Colonel Clark will observe on his part a like cessation of offensive work; that is, he wishes to confer with Colonel Clark, as soon as can be, and promises that whatever may pass between them two, another person, mutually agreed on to be present, shall remain secret till matters be finished; as he wishes, that whatever the result of the conference may be, it may tend to the honor and credit of each party. If Colonel Clark makes a difficulty of coming into the fort, Lieutenant Governor Hamilton will speak with him by the gate.

"HENRY HAMILTON.

24th February, 1779."

If Governor Hamilton had known the man he was dealing with, he would have found, ere this, that he would have made light of any difficulties "in getting into the fort;" and if not already convinced of the daring of the foe he was contending with, one would have supposed Clark's answer would have set him right:—

"Colonel Clark's compliments to Governor Hamilton, and begs leave to say, that he will not agree to any terms, other than *Mr. Hamilton surrendering himself and garrison prisoners at discretion.*

"If Mr. Hamilton wants to talk with Colonel Clark, he will meet him at the church with Captain Helm."

Laconic enough, surely, and easily understood; and so it was. For in less than one hour afterward, Clark dictated himself the following terms, which were accepted, a meeting having taken place at the church:—

"1st. Lieutenant-Governor Hamilton agrees to deliver up to Colonel Clark '*Fort Sackville*,' as it is at present, with all its stores, &c.

"2d. The garrison are to deliver themselves as prisoners-of-war, and march out with their arms and accoutrements.

"3d. The garrison to deliver up to-morrow at ten o'clock.

"4th. Three days time to be allowed the garrison to settle their accounts with the inhabitants and traders.

"5th. The officers of the garrison to be allowed their necessary baggage, &c.

"Signed at Post Vincents, this twenty-fourth of February, 1779, agreed for the following reasons:—

"1st. The remoteness from succor.

"2d. The state and quantity of provisions.

"3d. The *unanimity* of the officers and men in its expediency.

"4th. The honorable terms allowed—and lastly, the confidence in a generous enemy.

"HENRY HAMILTON,
Lieutenant-Governor and Superintendent."

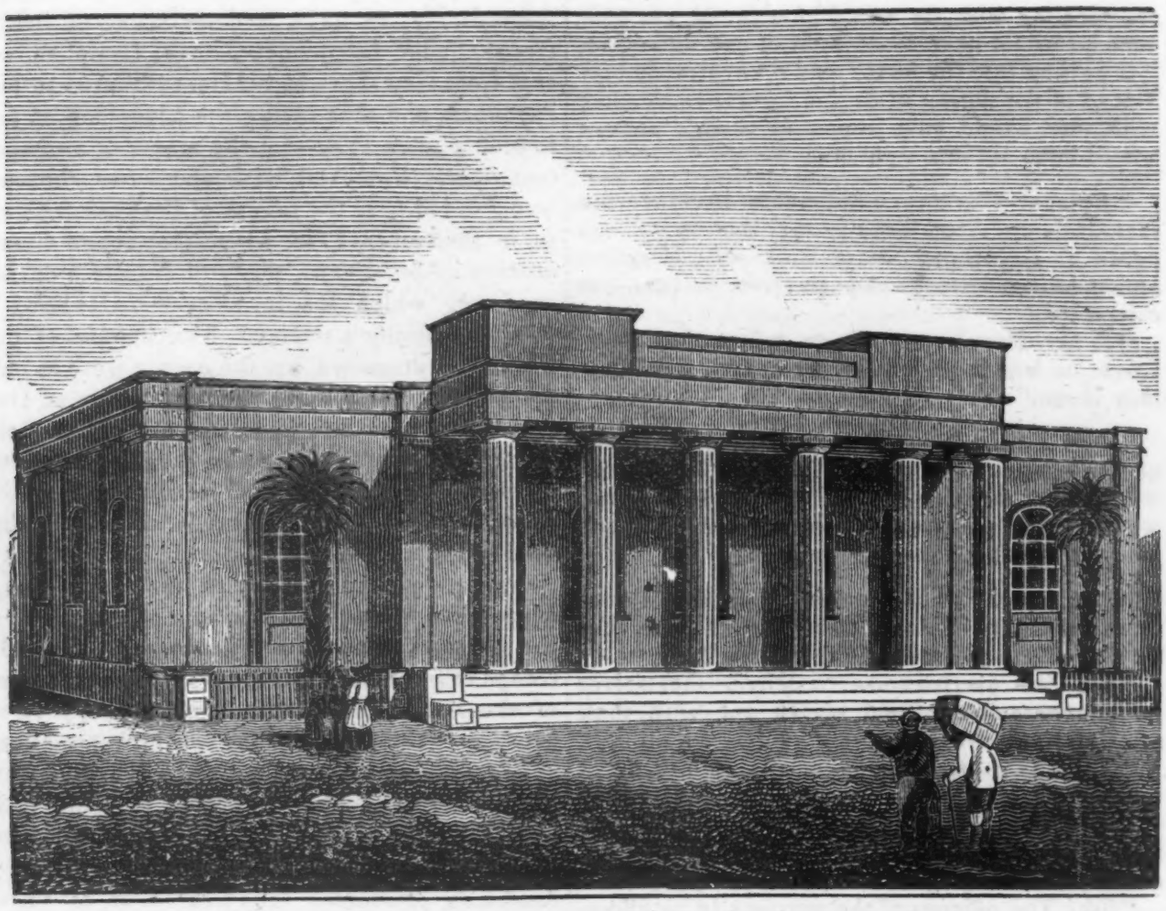
It was on the twenty-fifth day of February, 1779, about ten o'clock in the forenoon, that the British troops marched out, and the Americans entered that fort, acquired with the tact, skill, judgment, bravery, peril, and suffering, which I have so briefly attempted to describe.

SAVANNAH, GEORGIA.

THE city of Savannah is situated on a river of that name, and about eighteen miles from its mouth. It is the chief commercial town of the state, and contains about eleven thousand inhabitants. It is situated on a bluff point, forty feet high, and was built by General Oglethorpe in 1733. When the American colonies revolted in 1775, Savannah was considered one of the most important points in the southern country. Accordingly, in 1778, a detachment of British troops, under Lieutenant-Colonel Campbell, was sent from New York by Sir Henry Clinton to take Savannah, and thus secure the advantage of possessing a town at or near the mouth of an important river. Campbell, with about two thousand men, landed near the mouth of the Savannah river, in December, 1778, where they found a small number of Americans, ready to dispute a narrow causeway which the invaders were obliged to pass in crossing a swamp. This handful of men were soon dispersed, but the enemy were at once compelled to encounter the little army of General Howe, who then had command of the Georgia troops, or rather to whom was intrusted the defence of Georgia. His army consisted of about six hundred *continentals* and a few hundred militia. While Colonel Campbell was making preparations to attack the Americans, a negro gave him information of a private path, on the right of Howe's army, through which his troops might march unobserved. A detachment of the British under Sir James Baird, took advantage of this path, and the two divisions attacked General Howe, front and rear. Howe retreated, the British were victorious, and the town, with the fort, cannon, ammunition, stores &c., fell into their hands, with a large number of American prisoners. The next year, an unsuccessful attempt was made by the French and Americans, to recapture Savannah, and it remained in the hands of the British until about the close of the revolution. During that attack, Pulaski the brave Polish general and patriot, who had warmly espoused the American cause, was killed.

Savannah is a place of great trade. Vessels drawing four feet of water, can load and unload at its wharves. It is one of the chief depositories of the south, for cotton, whence an average of one hundred and twenty thousand bales are annually exported, beside large quantities of rice and tobacco. A large number of vessels from the different commercial countries of Europe, may always be seen in its harbor, and at all seasons of the year business activity is a characteristic of the place.

In 1820, fire laid a large part of the town in ruins, since which time many handsome and costly edifices have been erected. There are ten churches, an exchange (in which the post-office is kept), courthouse, hospital, poorhouse, academy, theatre, and four banking-houses. Our engraving represents one of the latter buildings, which was erected by the government for the use of the branch of the United States bank, then located at Savannah. It is now occupied by (we believe) the Central Railroad Banking company. The building is of brick covered with stucco.



The two trees represented in front of it, are of the palm species, very similar to the palmetto, called *Spanish bayonet*.

Savannah contains ten public squares, planted with trees. One of these is called Pulaski square, in the centre of which the inhabitants have erected a monument to the memory of the Polish patriot. It is a simple obelisk of white marble, about twenty-five feet high, including the pedestal.

CHOCOLATE.

Though *tea* and *coffee* are the most generally-used breakfasting materials, chocolate is a very important article of consumption; for it not only equals either of the above-named materials in flavor, but is, also, infinitely superior to them both in its nutritious qualities. For persons suffering from illness or debility, it is a most valuable restorative and nutriment; and many invalids have derived immense good from their use of it.

This useful and valuable article is made from the nuts of the cocoa-tree—a tree which, in appearance, bears some resemblance to our cherry-tree, and which is very largely cultivated in South America and in the West Indies. The leaves of this tree are somewhat like those of the orange tree, and are remarkable for the great numbers in which they ornament each tree. The nuts are contained, to the number of twenty-five or thirty, in each bundle of the fruit which grows on this tree. Beside being thus enclosed, the nuts have each another covering, in the form of a thin and yellowish skin or husk. These nuts being pressed, and properly prepared, are afterward made up into cakes, in the form in which we receive the chocolate. The nuts, in the process of being pressed, yield an oil which has very little scent or taste, but which is used in the manufacture of some oleaginous cosmetics.

Chocolate is now very generally, if not universally, known and used in Europe; but it was originally introduced there by the Spaniards, who necessarily were the earliest Europeans acquainted with it, as they were the first acquainted with South America itself.

The Mastodon in Texas.—This remarkable fossil quadruped, it appears, existed also in Texas, as well as in almost every latitude of the United States south of forty-five degrees. A late Texas paper says, General Demyss has succeeded in disinterring nearly all the bones of the Mastodon, found two miles below Bastrop, near the Colerado.

It is a fact, which should operate as a check to human pride, that the ugliest and most awkward of the brute creation have the greatest resemblance to man—the monkey and the bear.

NATURAL HISTORY.

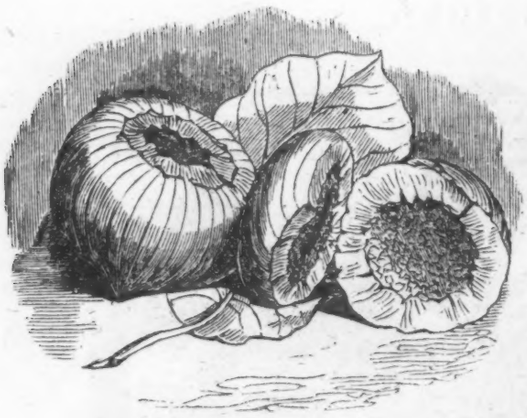
Group of Animals of opposite natures living in the same cage.

ASSOCIATION OF ANIMALS OF OPPOSITE NATURES.

All associations between animals of opposite natures are exceedingly interesting; and those who train animals for public exhibition know how attractive are such displays of the power of discipline over the strength of instinct. These extraordinary arrangements are sometimes the effect of accident, and sometimes of the greater force of one instinct over the lesser force of another. A rat-catcher having caught a brood of young rats alive, gave them to his cat, who had her kittens taken from her to be drowned. A few days afterward, he was surprised to find the rats in the place of the drowned kittens, being suckled by their natural enemy. The cat had a hatred to rats, but she spared these young rats to afford her the relief which she required as a mother. The rat-catcher exhibited the cat and her nurslings to considerable advantage. A somewhat similar exhibition exists at present. There is a little menagerie in London, where such odd associations may be witnessed upon a more extensive scale, and more systematically conducted than in any other collection of animals with which we are acquainted. Upon the Surry side of Waterloo Bridge, or sometimes, though not so often, on the same side of Southwark Bridge, may be daily seen a cage about five feet square, containing the quadrupeds and birds which are represented in the above engraving. The keeper of this collection states that he has employed seventeen years in this business of training creatures of opposite natures to live together in content and affection. And those years have not been unprofitably employed! It is not too much to believe, that many a person who has given his halfpenny to look upon this show, may have had his mind awakened to the extraordinary effects of habit and of gentle discipline, when he has thus seen the cat the rat, the mouse, the hawk, the rabbit, the guinea-pig, the owl, the pigeon, the starling, and the sparrow, each enjoying, as far as can be enjoyed in confinement, its respective modes in life, in the company of the others; the weak without fear, and the strong without the desire to injure. It is impossible to imagine any prettier exhibition of kindness than is here shown: the rabbit and the pigeon playfully contending for a lock of hay to make up their nests; the sparrow sometimes perched on the head of the cat, and sometimes on that of the owl, each its natural enemy; and the mice playing about with perfect indifference to the presence either of cat, or hawk, or owl. The modes by which the man has effected this, are, first, by keeping all the creatures well fed; and, secondly, by accustoming one species to the society of the other at a very early period of their lives. The ferocious instincts of those who prey on the weaker are never called into action; their nature is subdued to a systematic gentleness; the circumstances by which they are surrounded are favorable to the cultivation of their kindlier dispositions; all their desires and pleasures are bounded by their little cage; and though the old cat sometimes takes a stately walk on the parapet of the bridge, he duly returns to his companions, with whom he has been so long happy, without at all thinking that he was born to devour any of them. This is an example, and a powerful one, of what may be accomplished by a proper education, which rightly estimates the force of habit, and confirms, by judicious management, that habit which is most desirable to be made a rule of conduct. The principle is the same, whether it be applied to children or to brutes.

SYCAMORE FIGS.

Our engraving represents a small group of the fruit of the sycamore of Palestine, a tree, which, in former times, was considered next in value to



Sycamore Figs.

the palm and olive, on account of its fruit, which resembles figs, and the durability and beauty of its wood. The general appearance of the foliage of the tree, is similar to the fig and the mulberry, and its fruit is still held by the inhabitants to be a delicions edible. Like the sycamore of our own forest, the trunk of this tree frequently grows to an enormous size, and its branches spread wide. The fruit grows from the trunk itself, which throws out small sprigs not unlike grape-stalks; at the ends of which grow the fruits, clustered together after the manner of grapes. To ripen them properly, it is necessary that, as the season approaches, they should be scraped or rubbed about the middle. A man ascends the tree for this purpose, and he is repaid for his labor, by the improvement of the fruit. Without this culture, it is said to be quite unpalateable.

The ancient Egyptians and Hebrews valued the sycamore fig very highly, and at the present day it forms almost a staple of food for the lower classes. According to Norden, they think they have an excellent meal, when furnished with a piece of bread, two sycamore figs, and a jug of water from the Nile. This tree furnished almost the only wood used by the Egyptians for general purposes. It is light and porous, yet the coffins or cases in which their mummies were deposited three or four thousand years ago, are perfectly preserved.

FARMERS' DEPARTMENT.

MAKE FARMERS OF YOUR SONS.

Among the radical fallacies in popular sentiment, and which take a deep hold upon individual as well as national fortune, none perhaps are to be more seriously regretted than those which contribute to *crowd to overflowing*, what are usually termed the "learned professions" with half-starved supplicants for popular favor.

Doating parents, by scores, all over the country, take into their heads the common idea that intellectual greatness can only be acquired in the reading offices of the lawyer, the physician, or the divine, and only "shown off" to advantage at the bar, in the lecture-room, or the pulpit—and forthwith the destiny of their "rising sons" is half fixed. The boys, by no means averse to the easy process of being converted into learned doctors and lawyers, and always more than willing to "live without work" when idleness is as cheap, are readily persuaded to doff the farmer's garb for "tailor's cloth," and exchange honest country industry for the more leisure and elegant intellectual and *miscellaneous* exercise to be embraced in a professional gentlemen's study-room in *town*. Thus are our lawyers' offices and doctors' shops annually *crowded* with "young things" of every form and figure, from the regular built "huge paw" of seventeen "summer fallows," to the sallow stripling whose attenuated lamp of life, pent in a sultry town atmosphere and debarred the invigorating fuel of free country exercise would not seem to promise a month's lingering existence—all of whom are to be thrown upon the world's "patronage," the world's *bounty*, or the world's *charity*, to make a living "at the wit's end"—not by honest industry or productive labor.

To such an excessive degree has this been the case, that these "learned professions" are literally *starved out*, and are in turn *starving* the "thousand and one" tremulous, fawning, anxious supplicants for "public patronage," who steadily hang upon their thread-bare skirts for a precarious existence in every commonwealth in this republic. Teeming in numbers, and overflowing our borders, these young pilgrims in the "road to fame and fortune" have also penetrated (we learn) every pass of the young republic across the Sabine, and still our *exports* might be greatly enlarged were there a market—while our *imports* of the products of *farmers' work* annually amount to the enormous cost of more than $100,000,000! Think of that, my countrymen! Think of the *cost* of foreign bread-stuffs, sugars, silks, wines, horses, neat cattle, swine, sheep, cheese, edible roots, and the hundred other products of husbandry with which our *national prosperity* is taxed! and think of the individual penury, idleness, and dependance, which follow this "false direction" given to the native energies of our youth, while agriculture vainly invites to nature's most fertile, yet uncultivated and boundless fields, the well-directed hand of PRODUCTIVE LABOR.

It is time that the "false direction" given to the education and the destinies of the American youth was arrested. It has its origin in a fallacious turn of popular sentiment which cannot be too soon exploded. If we use plain language, it is from a deep conviction that *undisguised truth* is imperiously called for by this *crying evil*. The idea that the "learned professions" (so called) *alone* confer social respectability or intellectual acquisition, is fallacious. The idea that the pursuit of agriculture is merely *manual* is fallacious.

The idea that the education of a farmer should be merely *tolerable*, is fallacious. The idea that the highest agricultural attainments require less science, less mental research, than the highest legal or medical attainments, is unquestionably fallacious.

The idea that the *complete and finished farmer* is a man of less mental strength and respectability, of less intellectual labor and devotion to the pursuit of the highest order of science, than the *complete and finished lawyer*, is positively fallacious, and founded upon an utter misconception of the true and real function of the man! And yet these ideas are variously and generally entertained, to an extent constituting them the fruitful source of the evil so plainly named, so sensibly felt, and so much to be deprecated by all who are desirous of seeing conferred the greatest amount of national good and individual happiness upon the people of this republic.

Make farmers of your sons—and give them *educations* that they may become good farmers, and not be ashamed! They will have much to learn! There is *Geology*, with her "doctrine of the earth"—*Chymistry* with her abstruse phenomena of matter, its elements, its compounds, and its immutable laws—*Mechanism*, with her complex principles of construction—*Mathematics* with her multiplied laws of numbers—Vegetables and Animal *Physiology*, Ornithology, Meteorology, Zootomy, Zoology, and even Physics, Law and Divinity, as well as nearly all the other sciences—with which they should become acquainted, and an intimate knowledge of many of which is indispensable to their individual comfort and full success as farmers.

Make farmers of your sons—that they may not wander as ravens of the ark "to and fro," over the wide waters of the earth without finding a resting-place for their feet; or as uncertain dependants upon the precarious "patronage" of the world for that solid INDEPENDENCE and WEALTH which may as easily be wrought out by the manly labor of their own trusty hands.

Make farmers of your sons—that they may be easily inured to invigorating toil, robust exercise, and unfettered freedom of thought—that they may learn to rely upon their own energies, and not expect, by "bending the pliant hinges of the knee, thrift to follow fawning." That they may be taught to look for discounts to no other bank than a "bank of earth;" that they may expect dividends from no other "share" than the "ploughshare;" that they may have the enviable pleasure of numbering themselves among the producers and not be the consumers of their country's wealth; that their minds may be imbued with a love of nature and of nature's works, and kept aloof from strategic enterprise, deceptive artifice, punning device—(the mental machinery of public men)—and from revelry, artificial excitement, speculative adventure, hazard, vice—(the ultimate steps of worldly association)—and that they may thereby become more moral, more independent, more honest, more respectable, and more useful members of the great family of man! More anon.

Southern Cultivator.

PEACH-TREES.

GENTLEMEN of great experience in the cultivation of the peach assert that the decay of this valuable tree, is in a great measure and principally owing to the practice of grafting: an imperfect union takes place, sickly growth is the consequence, and the diseased tree is then rendered vulnerable to the attacks of the worm, which completes its destruction.

Now, if we would have healthy peach-trees, we must not do violence to nature; we must cultivate from the stone; and although we might find some bad and worthless fruit, we shall have much that is excellent, and obtain new and valuable varieties, by planting the seeds of those only which are very superior. A gentleman has just informed us that he has obtained peaches of most delicious flavor from trees the third year from the planting of the stone, without grafting or budding; and by far the finest peaches exhibited at the late horticultural meeting in Philadelphia, bearing the name of the Tippecanoe peach, were produced by the above means, the planter, it is said, having reserved the stone of a remarkably fine peach, which he purchased in the Philadelphia market for twelve and a half cents, and the tree from which had never been either grafted or budded. There are still in existence many large and aged peach-trees, which have never been removed from the place where the seed was planted, or either grafted or budded, but which continue to produce large crops of the finest peaches to be obtained for money in the market, and pruning them in their places until they produce fruit, at which time those of inferior sorts could be grafted, and others of fine flavor might be permitted to remain, with the expectation of their retaining health and vigor for many years to come.

THE WONDERS OF HORTICULTURE.

INNUMERABLE are the advantages which mankind have derived from the horticulturists. Few would suppose that the peach (from which branched the nectarine) had its origin in the wild lime. That favorite edible, celery, springs from a rank and acid root, denominated smallage, which grows in all sides of ditches, and in the neighborhood of the sea. The hazlenut was the ancestor of the filbert and cubnut, while the luscious plum can claim no higher source than the sloe. From the sonac crab issues the golden pippin, and the pear and cherry originally grew in the forest. The garden asparagus, which grows, though not very commonly, in stony, and gravelly situations near the sea, when growing spontaneously is a diminutive plant; and none indeed but a practised eye, examining in the species which is reared by artificial culture, can discern the least resemblance. Wondrous to relate, the cauliflower, of which the broccoli is a sub-variety, derives, together with the cabbage, from the colewort, a small plant, in its natural state, and scanty leaves, not weighing half an ounce. The crambe maratima, which is found wild adjacent to the sea, has been improved into seakale; the invaluable potato is the offspring of a bitter American root

of spontaneous growth; and the all-tempting pine-apple descends from a fruit, which in foreign climates, grows wild by the side of rivulets, and under the shade of lofty trees.

Gardener's Gazette.

LEAVES OF TREES FOR CATTLE.

A remarkable feature in the agriculture of France, and in most warm countries, is the use of leaves of trees as food for cattle. Not only are mulberry, olive, poplar, vine, and other leaves gathered in autumn but when they begin to change green in July, dried in the sun or in the shade of trees in the woods, fagoted and shocked for winter use. During that season they are given to sheep and cattle like hay and sometimes boiled with grain or bran for cows. The astringency of some leaves, as the oak, is esteemed medicinal, especially for sheep.

VARIATION OF THE MAGNETIC NEEDLE.

When a magnet is freely suspended in such a manner as to have the power of horizontal motion, it turns itself nearly north and south, and, if disturbed, returns, after a few oscillations, to the same position. There are few places where it points directly to the north and south poles of the earth, but to the east or west of these poles; this deviation is called the variation of the compass, and differs in amount and direction according to the geographical position of the place in which the experiment is made, although there are some places in which there is no variation.

The variation of the magnetic needle was not known for many centuries after the discovery of the directive power. No experiments of importance were made till the close of the sixteenth century, and yet it appears probable that the simple fact of variation was known as early as the year 1269. Cavallo has quoted from a letter written by Peter Adsiger, dated the eighth of August, 1269, in which the variation is positively stated: "Take notice that the stone, as well as the needle that has been rubbed by it, does not point exactly to the poles, but that part of it which is reckoned to point to the south declines a little to the west, and that part which looks toward the north inclines as much to the east. The exact quantity of this declination I have found, after numerous experiments, to be five degrees. However, this declination is no obstacle to our guidance, because we make the needle itself decline from the true south by nearly one point and a half toward the west. A point, then, contains five degrees." The authenticity of this letter has been doubted, and many arguments have been adduced to justify the skepticism. It is true that no notice was taken of this fact for two centuries after its discovery, and this may appear singular in the present day to those who do not know that even in this age of enlightened benevolence and disinterested zeal, discoveries are more frequently estimated by the wealth and influence of the discoverer than by their intrinsic value. But a graver charge has been pleaded. It is stated that, if the variation had been observed, it would, at the time mentioned, have been directed toward the west instead of the east. This argument is destroyed by another, which has been considered by the same persons as conclusive against the claims of Adsiger to the merit of the discovery. The instruments employed at the time have been thought inadequate for the discovery of the fact; but we might say with greater propriety that the insufficiency of the means accounts for the erroneous results, though the principle itself is true to nature. But it may be farther stated, that men do not usually fabricate for the purpose of deceiving, without having some interested motive. When individuals practise the arts of deception, they are invariably influenced by personal objects; it would be absurd to suppose a man a deceiver for the public good, and it is almost impossible to imagine so violent a misanthropy as that which would be displayed in an attempt to deceive with the purpose of producing a public evil. With these opinions we cannot assent to the supposition, that the letter bearing the name of Peter Adsiger is the work of one who had no other desire than the deception of posterity. If it were possible to imagine a confirmed misanthropist presenting himself to the world for the purpose of stating an important fact, that he might deceive all men as to the date of its discovery, then, indeed, we might agree with the disputants, that the letter in question was unworthy of credence, and that the fact stated was discovered at a period subsequent to the date recorded. But, as we cannot assent to the premises, so we must be permitted to believe that the letter is not a fabrication, and that the variation of the needle was known as early as the thirteenth century.

There are some places where there is no variation, and the line which connects all these places together is called the line of no variation. This line is very complicated, and appears to have no relation to those great circles which are called meridians. It may be traced from the north magnetic pole of the earth, supposed to be situated to the westward of Baffin's bay, to the United States of North America; crossing this continent, it enters the Atlantic, passing to the east of the windward West India isles toward the northeastern point of South America, over the southern Atlantic into the antarctic circle, but its course here is unknown. It is found again to the south of Van Diemen's Land, and crosses the western part of the Australian continent. In the Indian archipelago it is divided; one branch crossing the Indian sea to Cape Comorin, traverses Hindostan, Persia, and the western part of Siberia, and enters the North sea: the other branch traverses China, Chinese Tartary, and the eastern part of Siberia.

It is almost certain that there are at least two magnetic poles in each hemisphere, but their exact situation is not known. If we could deter-

mine the magnetic equator, there would be less difficulty in calculating the position of the poles; but, in the present state of our knowledge, this problem cannot possibly be solved in any other manner than by experiment. Attempts have been made by voyagers; but those who are acquainted with the local disturbance to which the needle is subject, must be aware that the circumstances under which the experiments have been made were so unfavorable that we can scarcely depend upon the results.

It was long supposed by philosophers that the magnetic poles were situated on or near to the surface of the earth, but the accuracy of this supposition was afterward doubted. M. Biot was the first to attempt the solution of this question by calculations founded on the observations which had been made, in various parts of the world, upon the dip and variation, and more especially upon those furnished by M. Humboldt. Professor Kraft, of St. Petersburgh, also undertook the same examination, and the two philosophers arrived at the same law, proviag the inaccuracy of the first supposition.

RUINS OF CARTHAGE.

M. Felix Flachenacker, formerly a professor in the college of Algiers, and now at Tunis, collecting observations, statistical and archæological, relating to its condition, with a view to future publication, has, in the meantime, addressed a letter to M. Arago, from which we collect the following interesting particulars relative to the ruins of the ancient city of Carthage:—

"Covered," says M. Flachenacker, "with pediments and capitals, fragments of bas-reliefs, and columns of marble and of porphyry, and numerous and vast cisterns, which time has scarcely touched—that immense solitude which bore, of old, the name of Carthage, and over which now stalks, as it were, the genius of ruin, is broken by no other sound than the monotonous song of the half-naked Arab, who feeds his flock amid the wrecks of temples and palaces, and to whom Hannibal and St. Louis are alike unknown. Over this immense necropolis presides the solitary tower in which St. Louis died, to this day called, by a misnomer, the 'Tomb of St. Louis,' and recalling to the imagination the stormy scenes of the crusaders. It seems certain, from such slender indications as remain, that Carthage stood on the tongue of land formed by the Mediterranean on one side, and the lake on the other —that is to say, upon a space occupying nearly three leagues in extent—a vast plain intersected by small hills, amid which lie scattered the numerous vestiges of the superb city that held the sceptre of the seas. The city itself, properly so called (which is said to have been surrounded by a triple enclosure, and capable of containing from twenty to twenty-five thousand fighting-men), stretched from the foot of the hill on which the citadel Byrsa (now Beursak) stood, northward to the environs of Marsa (the place where the consuls have their country-houses), and in a southerly direction to the lake, which even covers a portion of its faubourgs. The best proof which I can offer of this last assertion is, that when the sky is clear, and the waters of the lake unruffled, architectural remains are visible, on which the keels that make the passage from Goulette to Tunis strike, and are frequently impeded, when they have steered a wrong course, or are too deeply laden. In this vast space, which presents the form of an immense triangle, whose apex was the citadel, was included the site now occupied by the modern village of Malga, constructed over a multitude of cisterns, within which the Arabs have made their homes, and find magnificent stables for their horses and cattle. These, it is probable, are the elephants' stables spoken of by Lady Montagu, and which M. de Chateaubriand states himself to have discovered in the subterranean chambers of a miserable village, lying at the foot of the ancient hill of Byrsa, and conjectured by him to be the *Tens* of Lady Montagu. These places, however, could never have had the destination which she supposes; because, in the first place, they are too low to have been the stables of animals so enormous, and, in the second, their immense number (the entire plain being covered with them) altogether excludes such idea. It is more rational, to suppose that they served as lodgings for the troops, or perhaps for the poor among the population of Carthage; as, in our days, we see the Bedouins of Malga, Oudenah, Menzell, Sidi-Rhajes, and other places, occupying similar subterraneous abodes, which offer a residence more cool and commodious than tents."

In giving some measurements of the gigantic aqueduct which anciently conveyed the stream of the Zowan to Carthage (derived from an examination of its actual ruins), M. Flachenacker mentions some interesting experiments made by M. Benoit, for the purpose of determining the quantity of water which that great work delivered in the city, with a view to an approximative guess at its population, as derived from that datum. The result at which he arrives gives an amount of one million three hundred thousand souls to ancient Carthage; but he remarks, that this calculation, beside being purely speculative, omits to take into account the various towns and villages which the aqueduct, no doubt, supplied in its immense development, as well as a huge circus, which stood upon a rising ground at some distance from the sea, and must have been fed from the same channel, for the representation of its Naumachia, or sea-fights.

The port of Cothon, which is placed by Shaw to the northwest of Carthage, M. Flachenacker gives his reasons for laying down at exactly the opposite point of the compass. "I have examined," he says, "not once, but seven or eight times, the northwest coast, and have never discovered the slightest vestige indicating the sight of a port. I have found only the ruins of a few country-houses (*maisons de plaisance*) along the shore, in which, with all the inclination in the world, it is impossible to find any trace either of mole or jetty, or anything else appertaining to a port.

On the southeast, on the contrary, that is to say, along the whole extent of the coast which borders the roadstead (and which stretches from Sidi-Ben-Said, a modern village built on the Cape of Carthage, to Goulette), numerous indications of a port are met with at every step. In the first place, on descending the hill of which I have spoken, and after passing the fort miscalled "The Tomb of St. Louis," are seen, in good preservation, the ruins of a temple which may have been dedicated to Neptune or to the celestial Juno. * * On quitting the temple, and descending toward Goulette, are found a multitude of small cells ranged along the coast, and distant from it only a few toises. These are divided from each other by a wall, the vestiges of which yet exist to the height of several inches above the surface of the soil. Each cell may be about ten or twelve feet in width, and there is no reason to prevent our supposing that they may have been occupied by the merchants of the port, an hypothesis at any rate more probable than that of a certain traveller who looks upon them as a species of covered creeks, into which the Carthaginians drew up their boats out of the water; for beside the argument that, however insignificant may have been the galleys of the Carthaginians, these cells must have been both too low and narrow for their reception, there is the farther one, that the vessels in question could not have been brought thither without being hoisted over a quay which ran the whole length of the coast in front of these cells, and may be distinctly traced in its extent when the sea is calm. * * Between these cells and this quay there was an empty space for promenaders, or for the merchants to deposite their goods; and, consequently, the boats lay beyond this quay along that portion comprised between the Cape of Carthage and a jetty which stretches its arms into the sea at about gun-shot distance. This jetty is formed of enormous blocks of stone, or rather rocks, laid alongside one another, and having a breadth of fifty feet. Within this space it is to be remarked, that the water is of greater depth, and everything gives indication of a port, either natural or dug by the hand of man. The very stones may be traced which form the line of connexion between the two arms of the jetty. Behind the twenty-fourth cell are found the ruins of a large edifice which may, in all probability, have been the palace of the admiral. Its elevated site, and the view which it commands over the port and roadstead, render that supposition probable. Another reason, which seems to be decisive, for placing the port in this part of the coast, is, that the Carthaginians, the most maritime people of antiquity, well knowing the violence of the northwestern wind, which blows, during a large portion of the year, on these coasts (and is known in our day under the name of the *mistral*), would never have dug, at great labor, a port on the northwest coast, exposed to this very wind, when they had, on the opposite side of the tongue of land on which they had built their city, a wide and admirable roadstead, with a natural port, where the mistral and the northeast wind lose a great portion of their violence—arrested, as they are, the one by Cape Carthage, and the other by the Cape Zafran." Athenæum.

ETHAN ALLEN IN ENGLAND.

Colonel Ethan Allen was a man destined to strike the world as something uncommon, and in a high degree interesting. He was but partially educated and but obscurely brought up—yet no man was ever more at ease in the polished rank than he. Not that he at all conformed to their artificial rules and title etiquette; but he had observed the dictates of natural good sense and good humor. His bearing was in total defiance of fashion, and he looked and acted as if he thought it would be a condescension thus to trammel himself. It is well known that in early life, in his own country, he acquired an influence over his fellow-men, and led them on to some of the most daring achievements. He seemed to have possessed all the elements of a hero—a devoted patriotism, a resolute and daring mind, and an excellent judgment.

His conduct as a partisan officer is well known in this country, and was of great service to the cause of liberty during our revolutionary struggle. He was taken prisoner and carried to England—where his excellent sense, his shrewdness and wit, introduced him into the court region. A friend of our earlier life, who was well acquainted with this part of the history of this singular man, used to take great delight in telling us some anecdotes of Colonel Allen, while a prisoner in London. We have before mentioned the firmness with which he resisted the attempts to bribe him from the cause of his country, and the caustic satire with which he replied to a nobleman, who was commissioned by the ministry to make him formal offers to join the British cause in America. The incident is a striking one, and it will bear a repetition.

The commissioner, among the tempting largesses, proposed that if he would espouse the cause of the king, he might have a fee-simple in half the state of Vermont. "I am a plain man," said Colonel Allen in reply, "and I have read but few books, but I have seen in print somewhere, a circumstance that forcibly reminds me of the proposal of your lordship: it is of a certain character that took a certain other character into an exceeding high mountain, and showed him all the kingdoms of the earth and the glory thereof, and and told him that if he would fall down and worship him, this would all be his; *and the rascal*," added he, "*did n't own a foot of them!*"

His interview with the king at Windsor is mentioned as highly interesting. His majesty asked the stout-hearted mountaineer, if they had any newspapers in America. "But very few, and these are but little read," was the answer. "How then," asked the king, "do the common people know of these grievances of which they complain, and of which we have just been speaking?"—"As to that," said he, "I can tell your

majesty, that among a people who have felt the spirit of liberty, the news of oppression is carried by the birds of the air, and the breezes of heaven." "That is too figurative an answer from a matter-of-fact man, to a plain question," rejoined the king. "Well, to be plain," answered the rebellious subject, "among our people the tale of wrong is carried from man to man, and from neighborhood to neighborhood with the speed of electricity; my countrymen feel nothing else—out of the abundance of the heart the mouth speaketh. I will add, with great respect to your majesty, that such a people cannot be put down with the sword."

The king made a long pause, as if strongly impressed with the truth of his remarks. At length, changing the subject, he asked Colonel Allen if he knew Dr. Franklin; and being answered in the affirmative, inquired concerning his experiment with electricity, and expressed a curiosity to experience an electrical shock. The British sovereign seemed to take pleasure in the conversation which he kept up for more than an hour, and at length made Colonel Allen promise to visit him with his countryman, Dr. Franklin, at his palace in London. Some weeks after that, he was reminded of his promise by the nobleman above mentioned, and an hour fixed for the home-bred philosopher of America to explain the mysteries of a new discovery in the science to the royal family. They attended accordingly, and with an apparatus chiefly of his own invention, Dr. Franklin exhibited many of those simple and amusing experiments, for which he was so noted, and at which the royal children, even those of a larger growth, were much delighted.

In this playful way, Dr. Franklin took occasion to convey instructions as to the properties of this astonishing fluid. While the royal habitation was thus in a most unkingly uproar, the premier was announced as in waiting. The king seemed for a moment disturbed. "I forgot my appointment with the minister," said he, "but no matter, I will eschew business for once, and let North see how we are employed." Accordingly the minister was ushered in with little ceremony, and it was soon concluded that he should have a shock. Allen whispered to the doctor to remember how he had *shocked* us across the waters, and to give him a double charge. Whether it was designed on the hint of his friend or not, was not ascertained, but the charge was so powerful on the nerves of his lordship, as to make him give way in the knees, at which all, especially the princesses, were almost convulsed with mirth.

Some of Colonel Allen's happy retorts at the clubs and fashionable parties are still remembered and often repeated. On one occasion he was challenged to a glass of wine, by the beautiful Dutchess of Rutland, who seems to have been particularly pleased with his independent manner. "You must qualify your glass with a toast," observed the lady. The Varmounter, very unaffectedly observed that he was not used to that sort of ceremony, and was afraid he might give offence. If, however, the lady would be so good as to suggest a subject, he would endeavor to give a sentiment. "O yes," said she, "never mind the subject, anything will do, so that it has no treason in it."—"Well," says he, "this may do for a truth if not for a toast," and, fixing his eyes adoringly on the far-famed court beauty, he proceeded:—

"If anything could make a double traitor out of a good patriot, it would be the witchcraft of such eyes as your ladyship's."

The blunt sincerity with which this was spoken, together with its exact fitness to the occasion and the person, caused it to be long hailed in the beau monde, as an excellent good thing; and although it had the effect of heightening for a moment that beauty to which it was offered as a tribute, it is said the fair dutchess often afterward boasted of the compliment as far beyond all the empty homage she had received from the glittering coxcombry of the city.

A lady once sneeringly asked Colonel Allen, in a large assembly, at what time fashionable ladies of America preferred taking the air. He perceived her drift, and bluntly answered, "Whenever it was necessary to feed the geese and turkeys."—"What," inquired the lady, "do the fine women in your country descend to such menial employments?" Allen was always aroused at any attempt to depreciate the fair ones of his own country, and with a great deal of warmth he replied: "American ladies have the art of turning even amusements to account. Many of these ladies could take up the subject of your grace's family history, and tell you of the feats of valor and bursts of eloquence to which your ladyship is probably indebted for your distinguished name, most of which it is likely would be as new to you as the art of raising poultry." The sarcasm produced a deep blush in the face of the fair scoffer, but it produced for the captive and his countrymen an indemnity against court ridicule for the future.

METEOROLOGICAL OBSERVATIONS.

The following notices of the winters in the city of New York and the dates at which the Hudson was first closed each year at Albany, during a period of forty years, we copy from the New York Advertiser, dated December thirty-first, 1831. If any of our readers have kept a similar Journal from 1831 till the present time, they will confer a favor on us by giving us a statement similar in form to the subjoined:—

1789–'90.—A very mild winter. The mildest January since 1781. River open till 3d February, though occasionally obstructed by ice before.

1790–'91.—Very severe weather in December, but more moderate in January and February. River closed on the 8th December. Lowest degree of thermometer, this winter, five above zero.

1791–'92.—A very severe winter. River closed on 9th December; uninterrupted and severe frost for four weeks; lowest degree of thermometer one above zero.

1792–'93.—A very mild winter; river open all winter to Poughkeepsie; though it closed at Albany on the 12th December.

1793–'94.—A mild winter, with but little snow; river closed on 26th December.

1794–'95.—A very mild autumn and December; river closed on the 12th January; no ice till 3d January, and but little cold weather and snow this winter.

1795–'96.—Another very mild autumn and December; no ice till 21st December; river open till 23d January.

1796–'97.—Early winter and severe till 12th January; river closed on 28th of November, intensely cold on 23d and 24th December; mercury at zero in the morning.

1797–'98.—Very early and severe winter; river closed on 20th November; lowest degree three above zero.

1798–'99.—Very early, long and severe winter, though the weather was moderate for about three weeks in January; river closed on 23d November; lowest degree, two above zero.

1799–1800.—A mild winter; river closed on 6th January, but obstructed by ice before.

1800–'01.—A mild winter, with but little snow; a very mild December, river closed on third January.

1801–'02.—A remarkably mild winter; river open till 3d February, though obstructed by ice occasionally before. In January the mercury generally ranged between forty and fifty degrees, and no snow of any consequence fell till 22d February.

1802–'03.—A mild and variable winter with but little snow; river closed on 16th December.

1803–'04.—A very mild December: some severe weather and deep snows in January and the latter part of February; river open till 12th January; lowest degree, 12 above zero.

1804–'05.—A remarkably cold and variable winter, deep snows and heavy rains with high winds; lowest degree, 2 above zero; river closed on 13th December—much distress among the poor.

1805–'06.—Generally cold in January, though very mild in December and February; river closed 9th January, and opened on 23d February.

1806–'07.—A severe winter; river closed on 11th December; lowest degree, 4 above zero.

1807–'08.—A mild winter; December very mild; river closed on 4th January.

1808–'09—A long and severe winter, with much snow; river closed on 9th December; lowest degree, 6 above zero.

1809–'10.—Remarkably mild till 19th January, when the river closed, and the weather was intensely cold for several days; very little snow this winter; lowest degree, 1 above zero.

1810–'11.—Much snow in February, though not much severe cold this winter. This season was remarkable for a severe snowstorm on the 2d November; river closed on the 14th December.

1811–'12.—A severe winter; river closed on 20th December; lowest degree, 2 above zero.

1812–'13.—A severe winter; river closed on 21st December; lowest degree, 4 above zero.

1813–'14.—A severe winter; river closed on 22d December; lowest degree, 8 above zero.

1814–'15.—A very severe though variable winter; river closed on 10th December; lowest degree, 1 above zero.

1815–'16.—A variable though not severe winter; river closed on the 2d December.

1816–'17.—A very severe winter, though it did not set in till the middle of January; river closed on 16th December; thermometer on 15th February was 6 degrees below zero, and the first time since 1788 that it has fallen below zero in this city. As cold as in January, 1765, when the mercury sunk to the same degree; which the papers state to have been the coldest weather experienced in this city in 50 years.

1817–'18.—Generally moderate in December and January, though severe in February; river closed on 7th December, opened on 14th and closed again on 21st December; mercury fell to zero this winter.

1818–'19.—Severe weather for two weeks in December; river closed on 14th; generally very mild in January and February.

1819–'20.—A severe winter; several deep snows; river closed on 13th December, though obstructed by ice before; lowest degree 3 above zero.

1820–'21.—Intensely severe weather during the greater part of January, though mild in February; river closed on 13th November, opened on 20th and closed again on first December; the mercury fell on 25th January to 7 degrees below zero, one degree lower than in February, 1817; as cold weather probably as was ever experienced here. The Hudson was crossed on the ice between this city and Powles Hook for several days. During the last hundred years, the river has been passable on the ice in the same way only four times, viz, in 1740–'41, 1764–'65, 1779–'80, 1820–'21.

1821–'22.—A severe winter with but little snow; river closed on 13th December; mercury as low as 1 below zero.

1822–'23.—No very severe weather till February and March, river closed on 24th December: lowest degree 3 above zero.

1823–'24.—Very mild winter; river closed on 16th December; open in January for a short time.

1824–'25.—Mild winter with but little snow; river closed on 3d January.

1825–'26.—Weather generally very mild, though there were two or three excessively cold days this winter. December 14th was a remarkably cold day; thermometer at 8 A. M. 3 and 10 P. M. indicated 2, 7, and 9 degrees; river closed on 13th December.

1826–'27.—A severe winter; river closed on 24th December; lowest degree 3 above zero.

1827–'28.—A very cold and blustering November, followed by the mildest winter since 1801–'02; river closed only about three weeks at different times through the winter. The mildest February since 1778–'79, when vegetation commenced and flowers were gathered in the woods, and in Pennsylvania peach-trees blossomed in this month.

1828–'29.—A long, severe winter; river closed on 1st January and opened on 29th March; lowest degree, 6½ below zero. Much suffering among the poor in February.

1829–'30.—Weather generally mild till 23d January, when the river closed; weather then very severe for several weeks. As much ice in our harbor as in 1826–'27; lowest degree 3 above zero.

1830–'31.—A very severe winter with several deep snows; ground covered with snow from 6th January to 28th February, a longer period than in any winter since 1808–'09. Severe and uninterrupted frost for upward of five weeks, during which time there were but three days in which the mercury rose as high as the freezing point; lowest degree, 5 above zero. Much distress among the poor—river closed on 23d December, opened again by heavy rains and closed again on 10th January.

1831.—December 10th.—Thus far the coldest December since 1786; lowest degree, 14 above zero; river closed on 3d December.

AMERICAN WOMEN.

No American woman falls into the toils of matrimony as into a snare held out to her simplicity and ignorance. She has been taught beforehand what is expected of her, and voluntarily and freely does she enter upon this engagement. She supports her new condition with courage, because she chose it. As in America paternal discipline is very relaxed, and the conjugal relation very strict, a young woman does not contract the latter without considerable circumspection and apprehension. Precocious marriages are rare. Thus American women do not marry until their understandings are exercised and ripened—whereas in other countries most women generally only begin to exercise and ripen their understanding after marriage. * * When the time for choosing a husband is arrived, that cold and stern reasoning power which has been educated and invigorated by the free observation of the world, teaches an American woman that a spirit of levity and independence in the bonds of marriage is a constant subject of annoyance, not of pleasure; it tells her that the amusements of the girl cannot become the recreations of the wife—and that the sources of a married woman's happiness are in the home of her husband. As she clearly discerns beforehand the only road that can lead to domestic happiness, she enters upon it at once, and follows it to the end without seeking to turn back. The same strength of purpose which the young wives of America display, in bending themselves at once and without repining, to the austere duties of their new condition, is no less manifest in all the great trials of their lives. In no country in the world are private fortunes more precarious than in the United States. It is not uncommon for the same man, in the course of his life, to rise and sink again through all the grades which lead from opulence to poverty. American women support these vicissitudes with calm and unquenchable energy; it would seem that their desires contract, as easily as they expand, with their fortunes. The greater part of the adventurers who migrate every year to people the western wilds, belong to the old Anglo-American race of the northern states. Many of these men, who rush so boldly onward in pursuit of wealth, were already in the enjoyment of a competency in their own part of the country. They take their wives along with them, and make them share the countless perils and privations which always attend the commencement of these expeditions. I have often met, even on the verge of the wilderness, with young women, who, after having been brought up amid all the comforts of the large towns of New England, had passed, almost without any intermediate stage, from the wealthy abode of their parents, to a comfortless hovel in a forest. Fever, solitude, and a tedious life, had not broken the springs of their courage. Their features were impaired and faded, but their looks were firm: they appeared to be at once sad and resolute.

Murray.

TO MECHANICS.

Where did Franklin first cultivate the knowledge, that at length bore him to the height of fame? In a printing-office. Where did Bowditch study mathematics? In early life, on shipboard, and ever after, in hours snatched from the cares of busy life. How did Ferguson begin to study astronomy? Tending sheep in Scotland: lying on his back upon the bare earth, and gazing upon the heavens—mapping out the constellations by means of a simple string, stretched from hand to hand, with beads upon it, which, sliding back and forth, enabled him to ascertain the relative distances of the stars. Where did young Farraday commence his studies—still young, and yet successor in London to Day? He began his chymical studies a poor boy, in an apothecary's shop. Sir Richard Arkwright, who was knighted for the improvement he introduced into cotton-spinning, and whose fine seat upon the Wye is one of the fairest in England, was a barber till he was thirty years old. And at this moment there is a man in New England, who has read fifty different languages—who was apprenticed—who has always worked, and who still works, as a blacksmith.

THE NORSEMEN.—By J. J. Whittier.

Some three or four years since, a fragment of a statue rudely chiseled from dark gray stone, was found in the town of Bradford, on the Merrimac. Its origin must be left entirely to conjecture. The fact that the ancient Northmen visited New England, some centuries before the discoveries of Columbus is now very generally admitted.

Gift from the cold and silent Past!
A relic to the present cast;
Left on the ever-changing strand
Of shifting and unstable sand,
Which wastes beneath the steady chime
And beating of the waves of time!
Who from its bed of primal rock
First wrenched thy dark, unshapely block?
Whose hand, of curious skill untaught,
Thy rude and savage outline wrought?

The waters of my native stream
Are glancing in the sun's warm beam;
From sail-urged keel and flashing oar
The circles widen to its shore;
And cultured field and steepled town
Slope to its willowed margin down.
Yet, while this morning breeze is bringing
The mellow sound of church-bells ringing,
And rolling wheel, and rapid jar
Of the fire-winged and steedless car,
And voices from the wayside near
Come quick and blended on my ear,
A spell is in this old gray stone—
My thoughts are with the Past alone!

A change!—the steepled town no more
Stretches along the sail-thronged shore;
Like palace-domes in sunset's cloud,
Fade sun-gilt spire and mansion proud!
Spectrally rising where they stood,
I see the old, primeval wood;
Dark, shadow-like, on either hand
I see its solemn waste expand;
It climbs the green and cultured hill,
It arches o'er the valley's rill;
And leans from cliff and crag, to throw
Its wild arms o'er the stream below.
Unchanged, alone, the same bright river
Flows on, as it will flow for ever!
I listen, and I hear the low
Soft ripple where its waters go;
I hear behind the panther's cry,
The wild bird's scream goes thrilling by,
And shyly on the river's brink
The deer is stooping down to drink.

But hark!—from wood and rock flung back,
What sound comes up the Merrimac?
What sea-worn barks are those which throw
The light spray from each rushing prow?
Have they not in the North sea's blast
Bowed to the waves the straining mast?
Their frozen sails the wintry sun
Of Thule's night has shone upon;
Flapped by the sea-bird's gusty sweep
Round icy drift, and headland steep.
Wild Jutland's wives and Lochlin's daughters,
Have watched them fading o'er the waters,
Lessening through diving mist and spray,
Like white-winged sea-birds on their way!

Onward they glide—and now I view
Their iron-armed and stalwart crew:
Joy glistens in each wild blue eye,
Turned to green earth and summer sky;
Each broad-seamed breast has cast aside
Its cumbering vest of shaggy hide;
Bared to the sun and soft warm air,
Streams back the Norsemen's yellow hair.
I see the gleam of axe and spear,
The sound of smitten shields I hear,
Keeping a harsh and fitting time
To Saga's chant, and Runic rhyme;
Such lays as Zetland's Scald has sung,
His gray and naked isles among;
Or muttered low at midnight's hour,
Round Odin's mossy stone of power.
The wolf beneath the arctic moon
Has answered to that startling tune;
The Gael has heard its stormy swell,
The light Frank knows its summons well
Iona's sable-stoled Culdee
Has heard its sounding o'er the sea,
And swept with hoary beard and hair
His altar's foot in trembling prayer!

'Tis past—the 'wildering vision dies
In darkness on my dreaming eyes!
The forest vanishes in air—
Hill-slope and vale lie starkly bare;
I hear the common tread of men,
And hum of work-day life again:
The mystic relic seems alone
A broken mass of common stone;
And if it be the chiseled limb
Of Berserkar or idol grim—
A fragment of Valhalla's Thor,
Or Tyr, the restless god of War,
Or Praga of the Runic lay,
Or love-awakening Siona,
I know not—for no graven line,
Nor Druid mark, nor Runic sign,
Is left me here, by which to trace
Its name, or origin, or place.

Yet, for this vision of the Past,
This glance upon its darkness cast,
My spirit bows in gratitude
Before the Giver of all good,
Who fashioned so the human mind,
That from the waste of time behind,
A simple stone, or mound of earth,
Can summon the departed forth;
Quicken the Past to life again—
The Present lose in what hath been,
And, in their primal freshness, show
The buried forms of long ago.
As if a portion of that thought
By which the Eternal will is wrought,
Whose impulse fills anew with breath
The frozen solitude of Death,
To mortal mind were sometimes lent,
To mortal musings sometimes sent,
To whisper—even when it seems
But Memory's phantasy of dreams—
Through the mind's waste of wo and sin,
Of an immortal origin!

TO A YOUNG MOTHER.—A. M. Wells.

Belinda! the young blossom that doth lie
So lightly on thy bosom, clasp it there;
For on her brow an emp'ress doth not wear,
Nor in her jewelled zone, a gem more fair,
Or that doth deck her more becomingly.
Forget not, then, that deep within thy flower
The germes lie hid of lovelier, holier things:
Filial affection, that spontaneous springs;
High *truth* and maiden *purity*; the *power*
That comes of *gentleness*; ay, and more,
Piety, nourished in the bosom's core:
These, if so cherished, shall thy blossom bear,
And with the dews of heavenly love impearled,
It shall adorn thee in another world.

SAPPHIRE.

Sapphire is a precious stone. The white and pale blue varieties, by exposure to heat, become snow white, and when cut exhibit so high a degree of lustre that they are used in place of diamond. The most highly prized varieties are the crimson and carmine red; these are the oriental ruby of the jeweller, and, next to the diamond, are the most valuable minerals hitherto discovered. The blue varieties, the sapphire of the jeweller, are next in value to the red. The yellow varieties, the oriental topaz of the jeweller, are of less value than the blue or true sapphire.

The asterias, or star-stone, is a very beautiful variety, in which the color is generally of a reddish violet, and the form a rhomboid, with truncated apices, which exhibit an opalescent lustre. If cut *en cabochon*, or in the form of an ellipse, the summit of the ellipse being situated exactly over the point corresponding with the summit of the rhomboid, there will be produced the appearance of a star with six rays, from which, when held in the sunshine, a bright yellowish light shoots forth, forming a beautiful contrast to the rich violet blue of the other part of the gem.

Sapphire is now usually set with foil of its own color: but it was formerly the practice, instead of a foil, to place under the gem the blue part of a peacock's feather. A sapphire of ten carats' weight is considered to be worth fifty guineas. An oriental ruby of thirty-one carats' weight, of perfect color, and without flaws, is considered almost as valuable as a diamond of the same weight. It is usually set with foil; but, if peculiarly rich in color, it is sometimes set with a bottom or *a jour*, that the stone may be seen through.

In the construction of time-keepers, no stones have been found sufficiently hard for jewelling the holes except the ruby and the diamond. It does not appear that the ancients ever engraved figures upon this mineral. All the engraved sapphires preserved in collections are of modern date; and of these one of the most beautiful is a red sapphire, or oriental ruby, on which is cut the figure of Henry IV. of France.

MISCELLANY.

EXCELLENT HINTS TO MECHANICS.

There is so much truth, wholesome advice, and good sense, in the following, which we extract from an exchange paper, that we cannot avoid giving it a place in our columns: "Avoid giving long credits, even to your best customers. A man who can pay easily will not thank you for the delay, and a *slack doubtful* paymaster is not too valuable as a customer to *dun sharply and seasonably*. A fish may as well attempt to live without water, or a man without air, as a mechanic without punctuality and promptness in collecting and paying his debts. It is a mistaken and ruinous policy to attempt to keep on and get business by delaying collections. When you lose a slack paymaster from your books, you only lose the chance of losing your money—and there is no man who pays more money to lawyers than he who is not prompt in collecting for himself."

NEW METHOD OF DRYING SPECIMENS OF PLANTS.

About five years since I accidentally discovered the following method of drying specimens of plants; and not having seen it mentioned in any work, and also being able to procure finer specimens by this method than by any other with which I am acquainted, I feel desirous of making it public for the benefit of other botanists. The only apparatus necessary is half a ream, or a ream of brown paper, and a quire of double-crown-cap paper. I have found that size commonly called "royal," to be the most useful size for the brown paper. It should be tolerably smooth; and that of the weight of about fifty-five pounds per ream will be the best thickness. The cap paper should be rather porous in its texture, and not too thick. It may be cut into half sheets, and each of these may be folded. The plan of proceeding will then be this: first, lay down upon a board or table a quire of the brown paper; lay upon it one of the folded half sheets of cap paper, between which the plant is to be laid out in the usual way; then place over it half a quire of the brown paper, and then another half sheet of cap paper, with a plant in it, then another half quire of brown, and so on till all the specimens are laid in. (Unless the specimens are very large, several might be laid between each half quire.) Finally, place the remainder of the brown paper on the top of the stack. Should the number of specimens requiring to be dried at one time be very great, it *may* perhaps be sufficient to lay a quarter of a quire between the specimens; but I should give the preference to half a quire. The time which specimens will require to dry on this plan will of course vary according to the nature of the plants, and the dryness of the weather; but in general a week will be sufficient in tolerably fine weather. The advantage in this plan appears to me to be this: the brown paper being very flexible in every direction, exerts an equal pressure on every part of the plant to be pressed, while in the common way of drying plants (a board being used to give the principal pressure) considerable force is exerted on the prominent and more elevated parts of a specimen, such as the stem, &c., while the leaves and thinner parts frequently shrivel in many plants, the thickness of the stem, &c., preventing an adequate pressure from being applied to them. This I have frequently found to be the case in plants with a woody stem, as *bidens tripartita*, *senecio jacobæa* and *aquaticus*, *pteris aquilina*, *eupatorium cannabinum*, &c., &c. By the above method these difficulties are completely obviated.

Cor. of Mag. Nat. His.

EDIBLE CHRYSALIDES OR SILKWORMS.

A LETTER from M. Favand, a missionary in China, states that during his long residence in that country, he has often seen the chrysalis of silkworms used as food. He has himself partaken of them, and found them at once strengthening and cooling. After having wound the silk of the cocoons, they are dried in a frying-pan, when the envelope will come off, and they appear like little yellow masses resembling the carp. They are fried in butter, lard, or oil, and moistened with broth. When they have been boiled in this for five minutes, they are stirred well, and crushed with a wooden spoon. The mandarins and rich people add the yolk of eggs in the proportion of one yolk to one hundred chrysalides. The poorer people are contented with salt, pepper, and vinegar, or, after stripping them, cook them with oil.

MARRIED people's disputes remind me of a story told in Leibnitz's Miscellanies. There were two brothers; the elder, Joseph Reinold, lived in Flanders, and was a catholic; the younger, William Reinold, lived in England, and was a protestant They carried on a long and warm controversy as to the merits of their respective faiths in letters, till they began to think it would be as cheap to see each other, as to pay so much postage. William went over to Flanders, and the controversy was renewed verbally. They fought so well, and the truth proved so powerful on both sides, that each of the brothers renounced his former religion, and adopted his brother's; so that the Fleming wrote a treatise against Cardinal Bellarmine, and the Englishman a defence of the catholic church, both of which are to be found in the Gottingen library. It is pretty much so in family quarrels; if the husband adopts his wife's views, she takes up the opinions he has abandoned, and defends them strenuously.

Jean Paul.

NORWEGIAN WATCHMEN.

THE extraordinary cries of the watchmen of Drontheim cannot but appear singular to the stranger. As each hour elapses, they are prepared with a different kind of exhortation or prayer; which, forming a sort of tune or chant, is sung by them during the dreary hour of the night. The following is a curious specimen of one of them; it is a literal translation:—

Ho! the watchman, ho!
The clock has struck ten,
Praised be God, our Lord!
Now it is time to go to bed,
The housewife and her maid,
The master as well as his lad,
The wind is southeast,
Hallelujah! praise be to God, our Lord!

The *vætker*, or watchman, is armed with an instrument as remarkable as his cry, being nothing less than a long pole, at the end of which is a ball well fortified with iron spikes. This formidable weapon is called *morgen stierne*, or morning star. The morning star does little, however, but grace the hand of the Norwegian watchman, honesty is so common in the north, and theft, as well as most other crimes, is comparatively of such rare occurrence, that his office is attended with little trouble or danger.

A WIFE.

WHEN a man of sense comes to marry, it is a companion that he wants, not an artist. It is not merely a creature who can paint or play, and sing and dance; it is a being who can comfort and judge, discourse and discriminate; one who can assist him in his affairs, lighten his sorrows, purify his joys, strengthen his principles, and educate his children. Such is the woman who is fit for a mother and the mistress of a family. A woman of the former description occasionally figures in the drawing-room, and attracts the admiration of company; but she is entirely unfit for a helpmate to a man, and to "train up a child in the way he should go."

A CELESTIAL REVERY.

THERE comes to the thoughtful and contemplative man a peculiar sense of serene majesty when twilight falls upon the earth in spring-time. The heart is then a devout worshipper in the great cathedral of nature. Low, deep-toned harmonies seem to vibrate in the still and solemn air; and faint mellow beams fading every moment, steal from the stained windows of the west, as one by one, the evening lights "go on their watch." But when twilight deepens into night, the wide o'erchanging firmament—then "that majestic roof fretted with golden fires"—in its bright and countless hosts of worlds overwhelms the wrapt gazer with awe, at the power and majesty of the Great Architect. "Are those bright orbs," he exclaims, "inhabitable worlds, like this of ours?"

Lo! even while we gaze, one falls far down the deep blue vault and vanishes away. Was a world in that inscrutable providence of the Supreme, then blotted from being? Is *our* universe but as a star, to the dwellers of those suspended spheres, and will it be seen ages hence to gleam from yon far-gleaming orbs, suddenly to fall and fade, like a transient meteor in the sky? He alone knoweth who spreadeth the heavens like a curtain, and hangeth the earth upon nothing! Faint glimpses are indeed afforded to the searches after the unseen—dim perceptions of nature's sublime mysteries.

We wonder and admire, when at a moment for years foretold, one celestial system clips with its mighty shadow a fellow system, as far in space as they sweep their eyes! We marvel when commissioned by the All-Powerful, a wan and misty orb, predicted for a century, "streams its horrid hair" upon the midnight sky. But of even those phenomena, how limited is our knowledge! Our best philosophical system is none other than a day-theorem; a net quotient confidently given out, where divisor and dividend are both known.

Knickerbocker.

Elymas struck with Blindness.

THE CARTOONS OF RAFFAELLE.

No. V.—ELYMAS STRUCK WITH BLINDNESS.

THE scenery of the cartoons is here diversified with a Prætorium, or Roman hall of justice. The composition is of that kind in which the middle space is left vacant, the figures being arranged on a semicircular line, and extending from one side of the picture to the other; an arrangement admirably adapted to this subject. The Proconsul Sergius Paulus, surrounded by his officers and lictors, is seated on his tribunal in front of a recess in the centre of the hall. Paul and Elymas are the foremost figures in the composition, placed on each side of the magistrate, and confronting each other. During the first promulgation of Christianity the preaching of the Apostles, and the fame of their miracles, instigated a number of impostors to an assumption of similar functions; among these, Bar-jesus, called Elymas, "a false prophet and a sorcerer," was one of the most conspicuous; he appears to have attained considerable credit, and on the arrival of Paul and Barnabas at Paphos, had the audacity to challenge them to a public discussion before Sergius Paulus, with the hope of preventing the proconsul from embracing the Christian faith. The presumption and impiety of Elymas were met by this denunciation from the lips of the apostle: "Behold! the hand of the Lord is upon thee, and thou shalt be blind, not seeing the sun for a season. And immediately," continues the sacred narrative, "there fell on him a mist and darkness, and he went about, seeking some one to lead him by the hand."

Elymas is annihilated by this calamity; he no longer exhibits the front or bearing of the subtle disputant or daring impostor. His whole action—the person bent, the arms and hands stretched out, one leg cautiously advanced, while the other sustains the weight of the figure, all indicate the confused and uncertain feeling of one struck with sudden blindness—all is expressive of astonishment, affliction, and dismay. The group behind him, amid much variety of action, is connected by an admirable chain of expression; one of the male figures points to Elymas; the other to Heaven; the female, on the contrary, who is no doubt meant for the wife of Elymas, protests aloud against the infliction, ascribing it to human malice, and pointing indignantly at St. Paul as the author of it. The officer who stands on the steps of the tribune, extends his hand toward the sorcerer, and turning to the surrounding crowd, seems to say, "Behold the judgment which has fallen on him!" while the man on the right of Elymas gazes on his face with such an intensity of wonder and curiosity as gives an air of reality to the whole scene.

Elymas is the personification of detected falsehood: St. Paul appears the image of irresistible truth; simple, erect, decisive, he stands in the calm consciousness of power, and it is only from his upraised arm and finger that we perceive it is from him that the impostor has received his doom. The whole composition is in the highest degree picturesque, although not the slightest sacrifice of propriety is made for that object; an air of decorum even, proper to a hall of justice, is preserved amid all the excitement of the scene; the figures

of the lictors are admirably characteristic, the proconsul himself has a striking air of grandeur and intelligence; his conversion was consequent on the event here represented, but Raffaelle was justified in indicating that essential circumstance by an inscription, as there was no other mode of expressing it.

MEMOIR OF MATTHEW CAREY.

THE characters of great and good men belong to mankind; and there is no duty more pleasant or useful, than that which seeks the recognition of their virtues, and stimulates in after life to the imitation of their example.

Few men have ever won a larger space in the public regards than Matthew Carey; and what constitutes that fact one of peculiar gratification to those who knew him best, few indeed were ever more deserving of public esteem. There is, then, an agreeable service that we may render unto ourselves, in studying aright, if possible, the points of his character which went to make him what he was.

Mr. Carey was born in Ireland, on the 28th of January, 1760. His father was a very worthy man, and, by the prudent exercise of his trade, that of a baker, amassed a handsome fortune. In early life, he was not remarkable for any extraordinary exhibition of his intellectual powers; and his education, previous to his reaching the age of fifteen, was mostly confined to the branches of a common English course. When, at that age, it became necessary to select a trade, his own inclination was decidedly in favor of that of a printer; and though he declares his father was very much opposed to that avocation, he was finally able to overcome the aversion, and went as an apprentice to a Mr. M'Donnell, of Dublin, a printer and bookseller, who was tempted, being very poor, to take him, in consequence of the thirty guineas to be paid as apprentice fees.

He represents himself to have been a voracious reader, previous to his entering with M'Donnell; and, like Franklin, in early life, he had made friends with the keeper of a circulating library, who used to supply him clandestinely with books, as his father was opposed to his perusing the promiscuous works usually, at that early day, to be met with in such an establishment.

In consequence of what he always considered, in after life, the carelessness of his nurse, he was lame in one foot from the time he was a year old; and though he ever appeared to regard this as an unparalleled calamity, it was, no doubt, the means of securing him more studious habits in early life than he would otherwise have possessed, inasmuch as his infirmity seriously prevented his mingling in those athletic sports, which most always take up a considerable portion of youthful days.

He states that his first essay as a writer was when he was about the age of seventeen, and upon the subject of duelling. It was produced in consequence of a hostile meeting between a fellow-apprentice, and the apprentice of a bookseller named Wogan. The difficulty grew out of a personal altercation between the lads, which ended in blows. Wogan very improperly urged his apprentice to send a challenge to the opponent, which was accordingly presented, demanding a meeting in the park on a certain day, and Wogan went out with his lad, and was the master-spirit of the whole affair. Mr. Carey regarded this as most exceptionable conduct on behalf of Wogan, and, therefore, consequently, wrote a bitter denunciation in the Hibernia Journal, a paper owned in part by Mr. M'Donnell. Young Carey became known as the author, and beside receiving a severe reprimand, his fellow-apprentice, a poor orphan, was finally dismissed, to appease the temper of Wogan; Carey was deeply indignant, and lost confidence in M'Donnell.

The next production of which he gives account, was a pamphlet, written in 1779, in regard to the oppression upon the Irish catholics; and this, from its results, proved to be one of the most important events of his early career. It shows also much of the ardency, patriotism, and love of liberty, which we shall see were, through life, leading traits in the character of Matthew Carey. It bespeaks likewise a comprehensive survey of the great principles of universal freedom, which America had been, and was then, securing, not only for her own sons, but for the nations that should follow her glorious example.

It will be pertinent to reprint, in this connexion, a single paragraph, sent out as the parachute of the obnoxious pamphlet.

"At a time when America, by a desperate effort, has nearly emancipated herself from slavery; when, laying aside ancient prejudices, a catholic king becomes the avowed patron of protestant freemen; when the tyranny of a British parliament over Ireland, has been annihilated by the intrepid spirit of Irishmen; it is a most afflicting reflection, that you, my countrymen, the majority of that nation, which has shaken off an unjust English yoke, remain still enchained by one infinitely more galling: that you are, through your own pusillanimity, daily insulted by impudent menacing advertisements from insignificant parts of the kingdom; that a few tyrannical bigots in Meath and Wexford, presume to take into their own hands the legislative and executive part of our government, and, with a dictatorial power, prescribe laws to their fellow-subjects."

The issue produced much excitement; and, parliament being in session, the Duke of Leinster brought it before the house of lords, and Sir Thomas Conelly in the house of commons. It was denounced treasonable and seditious, and quoted in proof of the rebellious views of the Roman catholics. Unfortunately for the cause of truth and human liberty, there have always been found in poor Ireland cringing sycophants to government, who at all hazards would sustain the "powers that be." It was declared to be in this spirit that a body of Roman catholics—possessing not a particle of that patriotism which accomplished the Irish insurrection of 1798, or the far nobler

event of 1776, which declared America "a nation of freemen"—denounced the publication of young Carey, and offered a reward for the apprehension of its author. His father was greatly alarmed—took steps to have the pamphlet suppressed—and by the advice of his friends the son was secretly put on board a Holyhead packet and sent to France. He was introduced to Dr. Franklin, "who had a small printing office at Passy, a village near Paris, for the purpose of reprinting his despatches from America, and other papers." He worked a while for the doctor, and afterward with Didot le jeune, on some English books, which that printer was republishing. In about twelve months, the excitement having died away in his native country, young Carey returned home.

While in France, he was called upon by the Marquis de la Fayette, who was seeking information relative to the condition of Ireland, and we shall see that the great patriot and friend of American liberty did not forget the acquaintance, when he was subsequently in Philadelphia.

After his return to Dublin, by the assistance of his father, who had in the meantime purchased of M'Donnell the balance of his son's apprenticeship, young Carey, then being twenty-two years of age, set up a paper called the Freeman's Journal. It was commenced in October, 1783, and is described by its editor, "as enthusiastic and violent." It soon obtained an extensive circulation, had decided influence on public opinion, "fanning the flame of patriotism which pervaded the land, and excited the indignation of government, which formed a determination to put it down." On the 7th of April, Mr. Foster moved in the house of commons—

"That an address be presented to the lord lieutenant, requesting that he will please issue his proclamation, offering a reward for the apprehension of Matthew Carey." *Parliamentary Register*, 1783–'84.

Mr. Carey was also prosecuted for a libel on the premier. He was finally arrested in his own office, and conveyed to the house of the sergeant-at-arms, l'Estrange, as parliament had previously adjourned. But parliament reassembled on the 19th of April, and he was taken before that body; and, to the astonishment of all the friends of anything like liberty of speech, Mr. Carey was, by a vote of forty-three to forty, committed to Newgate. On the 14th of May, "parliament having adjourned, and their power of detention in prison having ceased, I was," says Mr. Carey, "triumphantly liberated by the lord mayor. But," he adds, "although thus freed from the clutches of the parliament, the criminal prosecution for the libel on John Foster, the premier, like the sword of Damocles, was suspended over my head." The attorney-general having, besides, filed a bill against him, *ex-officio*, to prevent the action of the grand jury, it was deemed best that he should quit his native country, inasmuch as justice was obviously to be denied by those in authority in "his own, his native land." Accordingly, in the disguise of a female dress, to escape the myrmidons of government, he took passage on board the America, on the 7th of September, 1784, and landed in Philadelphia on the 15th of November following.

In the difficulties and embarrassments that had attended his prosecution and imprisonment, his means had much run down, and when he landed on the wharf at Philadelphia, he was an entire stranger, with scarce a dozen guineas in his pocket! The newspaper had been sold to his brother for five hundred pounds, to be remitted as soon as he could conveniently do so; but his hopes from that source were almost blasted, for he never received but fifty pounds, the Freeman's Journal having ultimately perished, "partly by the persecution of his brother, but chiefly by government's setting up a paper with the same name, in order to take its custom and destroy it."

But a very pleasant and unlooked-for event gave new courage to his hopes, if it did not indeed add a bright coloring to all his after career. We have said before that the Marquis de la Fayette had made a call upon young Carey while he was at the printing office of Passy, in France. He was then at Mount Vernon, whither a fellow-passenger of Mr. Carey named Wallace, had repaired, to deliver letters which he brought to the marquis. The marquis made many inquiries of Wallace in relation to the affairs of Ireland, and observed, that he had seen an "account of the parliament's proceedings against the persecuted printer, Matthew Carey." Wallace informed the marquis that he came passenger with Mr. Carey, and that he was then in Philadelphia. Subsequently, on the marquis's arriving in Philadelphia, he wrote Mr. Carey a note, desiring a call at his lodgings. "He received me," said Mr. Carey, "with great kindness, condoled with me on the persecution I had undergone, inquired into my prospects, and having told him I intended to set up a newspaper, he approved the idea, and promised to recommend me to his friends, Robert Morris and others. Next morning, a letter was handed to me from him, containing four one hundred-dollar-notes on the Bank of North America, but it contained not a word in reference to the enclosure." This was a noble act, worthy of the man who had expended a large portion of a princely fortune, and freely offered his life, in the cause of American liberty. He "meets a poor, persecuted young man, destitute of friends; his heart expands, and he freely gives him means of making a living, without the remotest expectation of return, or of ever again seeing the object of his bounty."

It is due to Mr. Carey to state, that he subsequently sent the marquis a valuable present; and when he arrived in our country in 1824, in broken fortunes, he sent him, also, a check at New York, for the full sum of four hundred dollars, which la Fayette very reluctantly received.

If Bulwer had imbodied the early career of Mr. Carey, he might well have said of him, that,

> "In the lexicon of youth, which Fate reserves
> For a bright manhood, there is no such word
> As *fail*."

Actuated by this dauntless spirit, he immediately

commenced a newspaper in Philadelphia, called the Pennsylvania Herald. He purchased his types out of his little fortune, and as a bookseller named Bell had recently deceased, among whose effects was an old and much-worn press, Mr. Carey purposed its purchase; but Colonal Oswald, who published the Independent Gazetteer, regarding the commencement of another paper with rival feelings, bid against Mr. Carey, until he raised the price of the old press to £50, nearly as much as a new one of the same kind was worth, "being," adds Mr. Carey, "one third of my whole fortune."

The first number of his newspaper was issued on the 25th of January, 1785, and the history of its progress shows that none but an undaunted mind and indomitable spirit would ever have been successful in its establishment. The editor was a perfect stranger, totally unacquainted with the feelings, prejudices, and wishes of those he had come among. The first decided impression which the newspaper made, was the commencement, in its columns, of the English newspaper practice of reporting, *in extenso*, the speeches of the house of assembly. This was then novel in this country, and soon made the Herald much sought—especially as the editor showed a wonderful faculty in making his reports accurate. He was much aided in this by a most tenacious memory, which was at the bottom, in all his after life, of his storing away for ready use, probably, a greater body of valuable statistical and other knowledge than most any man of the age in which he lived.

Parties, at this period, ran high in Pennsylvania, as they did elsewhere. The general classification was constitutionalists and republicans. "The former were supporters of the constitution then existing, which conferred the legislative powers on a single body, styled the house of assembly; and the executive department on a president and executive council. The republicans were zealous for a change in the legislature, so as to have two branches, a senate and house of representatives. There were various minor points of difference, unnecessary to be particularized."

Colonal Oswald, of the Gazetteer, was the organ for the republicans, and wrote a very violent attack on a society of foreigners, styled, "the newly adopted sons of the United States." Mr. Carey, A. J. Dallas, and many other powerful writers, were members, and they annoyed the republican party very much with their pens. Colonal Oswald denounced the society as "foreign renegadoes." Mr. Carey wrote a reply, in which were these sentences:—

"National reflections are as illiberal as they are unjust; but from Americans, they are something worse. A great part of the armies that nobly gained America her independence, were aliens, or foreigners, many of whose countrymen are now the subjects of obloquy and reproach. I mean French, Germans, Irish," etc.

A bitter newspaper controversy ensued, which finally terminated thus: Mr. Carey, in speaking of some of Colonel Oswald's paragraphs, holds this language:—

"The literary assassin, who basely attempts to blast a character, is a villain, whether he strut in the glare of day a ferocious Colonel Oswald, with a drawcansir countenance, or skulks a Junius, concealed for a quarter of a century."

Colonel Oswald made this reply:—

"Your being a cripple is your main protection against personal insults."

Mr. Carey's rejoinder was:—

"Though I am a cripple, there is a certain mode in which I would be on equality. This hint is the less necessary to a man whose newspaper frequently holds out threats of coming to the point."

This correspondence Mr. Carey reprinted in a satirical poem, entitled, "The Plagi Scurriliad, addressed to Colonel Oswald." The latter returned it by a Captain Rice, who said, "Colonel Oswald considers this a challenge." Mr. Carey coolly replied, "It was so intended," and referred him to a Mr. Marmie, a French gentleman, of the house of Turnbull, Marmie, & Co. The seconds fixed on Saturday, the 21st of January, 1786, for the day of meeting. They met, accordingly, in New Jersey, opposite the city. Colonel Oswald, having served in the army, was a practical shot, while Mr. Carey had never drawn a trigger but once in his life. They were at ten paces distance, when the word was given, and the pistol of Colonel Oswald shot his antagonist through the thigh bone, which laid him up for nearly sixteen months. All the records of the times show that both parties behaved coolly and magnanimously on the ground; and the result was more fortunate than most duels are, for it appears to have made the parties feel toward each other, with the generous Frenchman, Colonel Damas: "It is astonishing how much I like a man after I've fought with him."

It is but simple justice to Mr. Carey to add here, that he deprecated his having engaged in this duel during all his after life; and, following up his early impressions, he continued to wield his pen against this relic of the ages of barbarism, which has, through a false notion of honor, swept away from America so many valuable lives. Mr. Carey appears to have acted throughout with a firm conviction that it was the determined purpose of Colonel Oswald and his friends to blast his character and destroy his hopes; and, urged forward by a natural warmth of temperament, he declares, "On one thing I was resolved: if I displayed the white feather, I would never see Philadelphia more."

The next work in which Mr. Carey was concerned, was the Columbian Magazine, wherein he was interested with four other partners. He finally, however, withdrew, and commenced the American Museum, a magazine "intended to preserve the valuable fugitive essays that appeared in the newspapers," which he continued until December, 1787. But the times were not very propitious for magazines in those early days, and it should be mentioned as a matter of encouragement to others to persevere under great difficulties, that Mr. Carey declares himself often in such a state of "intense penury," that he was

frequently compelled to "borrow money to go to market." As a specimen of his extreme poverty, he quotes the case of a German papermaker, living fifteen miles from the city, to whom Mr. Carey had given a note for thirty-seven dollars, which he had to come to Philadelphia five times for, receiving the amount in as many instalments.

The marriage of Mr. Carey was the next event of importance. Miss B. Flahavan, the daughter of a highly respectable citizen, who, like thousands of others, was ruined by the revolution, was the partner of his choice. She had no dowry but that of prudence, intelligence, and industry, and these are far richer than any other that can be bestowed. She had united herself to a man whose whole fortunes consisted of a few hundred dollars worth of furniture, and some back numbers of his magazine, comparatively valueless as soon as the work was abandoned. But what of that? Both husband and wife had minds filled with good common sense. They had no false pride to retard their efforts. They were persevering and economical, and together they resolved to make their way in the world. "We early," says the husband, "formed a determination to indulge in no unnecessary expense, and to mount the ladder so slowly, as to run no risk of having to descend." What a salutary example is here written in one sentence for the young of our day! How altered is the mode of beginning the marriage life now-a-days. Large rents, expensive establishments, unlimited debts, "routes and rounds of fashion," are at once launched into; and the young couple live on, so long as petty shifts, contrivances, and deceptions, will sustain them, and then sink into hopeless misery, from which, perchance, they never recover. "Daughters, tenderly reared, and who have brought handsome fortunes to their husbands, are often obliged to return home to their aged parents, who have to maintain them, their husbands, and their children—a deplorable fate for old age." Fathers have the unspeakable misery of beholding their sons, in whom the hopes of after years were centred, broken down, indolent, reckless, dissipated—hanging on society as pests and nuisances, instead of becoming ornaments and examples of it. Oh, "what masses of misery would it not prevent,' if the young men of our day would adopt the shining and virtuous example of the heads of the family, the incidents of whose lives we may so profitably dwell upon!

They lived happily together for nearly thirty-nine years—until the death of Mrs. Carey, which occurred many years since—rearing a family of six children, two having died in infancy, and one at the age of seventeen. The prudential habits, fixed principles, and strong common sense, which ever guided these parents, have been reflected in the estimable characters of their children. It will not be proper to speak here, as we might be tempted to do, of the living; but we may be allowed the remark, as proof of correct parental guidance, that the gentlemen and ladies of this family are worthily ranked among our most estimable citizens. The eldest son, Mr. Henry C. Carey, was for many years known as one of the extensive book house of Carey, Lea, & Co., from which he retired, a few years since, with an ample fortune, as the result of strict application to business, and unfaltering mercantile honor. That gentleman, too, is a good writer, and his last work, which was upon political economy, has met high consideration from the ablest reviews of our own country, and those of England also.

After the relinquishment of the Museum magazine, Mr. Carey commenced printing and bookselling on a limited scale, but by the most unceasing industry, perseverance, and integrity, he went on gradually extending his business, and making slow but sure steps to wealth. "Some idea," says Mr. Carey, "may be formed of my devotion to business, from the fact, that, for above twenty-five years, I was present, winter and summer, at the opening of my store; and, my parlor being close to the store, I always left my meals when business of any importance was being transacted." How different this from the custom of too many of the present day. Up pretty much all night in the whirlpool of false society, the morn has wasted into noon ere they come out to their places of business, and in the afternoon, instead of "minding the shop," they find it "indispensable to health" to "whirl out of town in a cabriolet." If the example of such a man as Matthew Carey is worth anything, let those who are determined to succeed in life reform altogether those habits, which, are sure, sooner or later, to bring destruction upon them. Neglect of business, luxurious living, attempts at show, and false pride, are the alarming evils that lie in the path of many of the young beginners of our day, of all trades, professions, and avocations; and what lessons of caution and wisdom may we not learn from the characters, habits, and principles of the substantial men who have preceded us, and who, by slow but sure efforts, went steadily up to positions from which they had no fear of tumbling. Better to commence small, than to begin large and finally be broken down; and the entire history and experience of all the straightforward and sagacious merchants of the past, is a triumphant illustration, that industry, prudence, and honesty, are sure to ascend, in the long run, where all else may fail. Stephen Girard was once a poor sailor-boy before the mast; William Gray, an humble mechanic; and Peter C. Brooks, a small salary secretary in an insurance office; and yet they went up by their own hands, became honorable merchants, and amassed princely fortunes. They were, like all men who have made to themselves fame or fortune, hard workers and close thinkers. They "minded their own business," and, what was of infinite consequence, had no time to meddle with that of other people.

Their examples may well be imitated, for rigid mercantile integrity, and unfaltering punctuality in the performance of every obligation, by all who wish to go up in the right way.

In 1793, Mr. Carey was a most efficient member of the committee of health, with Mr. Girard and others, when the yellow fever prevailed so dreadfully in Philadelphia. Both these gentlemen

were very active in their devotion to the sick. When it was found impossible, from the danger of the situation, to obtain any one to become superintendent of the hospital at Bushhill, Stephen Girard nobly stepped forward; and Mr. Carey states that Mr. G. "helped to dress the sores, and perform all the menial offices for the sick." Mr. Carey wrote a history of this dreadful calamity, giving a "full account of its rise, progress, effects, and termination." It is a thrilling narrative.

In the same year, Mr. Carey, regarding with deep commiseration the forlorn condition of many of his countrymen who came to our shores, was principally instrumental in the formation of a society, called, "The Hibernian society, for the relief of emigrants from Ireland," an institution which has since done much good, and is still numbered among our most beneficial societies.

While Cobbet was in Philadelphia, in 1796, some meddlesome individuals sought to embroil Mr. Carey in an angry controversy with him. In one of Cobbet's previous works, he had mentioned Mr. Carey favorably, and the meddlers were constantly throwing out insinuations that Cobbet was afraid of him. Mr. Carey addressed a note to Cobbet, early on this attempted embroilment, in which he tells him, "I have never written a line respecting you, and my determination is to pursue the same line of conduct, unless I am driven to a different course by unprovoked aggression." But it seems that the issue finally came, and a very bitter one it was. It was a newspaper and pamphlet war of some time continuance, wherein many hard things were said by both parties. Mr. Carey finally published what he termed "A Plum Pudding for Peter Porcupine," handling his adversary without gloves. Cobbet, to turn this publication into ridicule, "sent his servant with some venison and gelly between two plates, in return for the plum pudding," which his antagonist sent back by a stout Irish porter, with directions to throw the plates in the middle of Cobbet's store, which the Hibernian did most faithfully, and shook his fists at Cobbet into the bargain.* Subsequently, Mr. Carey issued a hudibrastic poem, the purpose of which was to show up the scurrility and abuse that found place in Cobbet's newspaper; and so ludicrously did he do this, that it had the effect to end the "tug of war." Cobbet never made any reply afterward.

In 1802, Mr. Carey was elected by the senate of the state a director of the bank of Pennsylvania, which station he occupied until 1805. He mentions, as a disadvantage to him from the position, the lenity shown by the other directors, whereby his debts rose extravagantly high. This evil he urges with great warmth and zeal, as the one which several times in his business-life came near bringing him to bankruptcy. "I printed and published," he declares, "above twice as many books as were necessary for the extent of my business; and, in consequence, incurred oppressive debts to banks—was laid under contribution for interest to them and to usurers, which not only swallowed up my profits, but kept me in a constant state of penury. I was in many cases shaved so close by the latter class, that they almost skinned me alive. To this cause my difficulties were nearly altogether owing, for I did a large and profitable business almost from the time I opened a bookstore."

He sets down another evil practice of his business career, which he cautions young traders to shun as they would "temporal perdition." It is that of endorsation. "In this way, in fourteen years," he writes, "I lost between thirty and forty thousand dollars; and but for this, I might have retired from business ten years earlier than I did; besides, in one of the cases of failure, I was brought to the verge of stoppage." Actuated by that expansive benevolence, which, during his whole life, was a leading trait in his character, Mr. Carey, about this time, and for some years onward, wrote and published much to try and bring about a modification of the taxes of Philadelphia. His positions were founded on the great inequality that existed between the taxes on real estate and personal property. He states an example, viz: "Stephen Girard did not pay as much tax for all the stock of his bank, and all his bonds and mortgages, as were paid by a single ground rent of two hundred dollars." Some salutary improvements were finally made, especially so far as related to "ground rents and houses."

The next subject of public importance in which his pen became deeply engaged was, in 1810, on the question of the renewal of the charter of the Bank of the United States. He wrote a series of essays warmly advocating the renewal, and he gave much personal attention to the matter, as well at home as at the seat of the general government, which, all those who are familiar with the records of the times are aware, made him many bitter opponents, as well as many warm friends, according to the character of their views in regard to the measure in agitation.

The publication of "The Olive Branch" Mr. Carey regards as one of the most important events of his life. It took place in 1814. The purpose which the author had in producing it was, to "endeavor, by a candid publication of the follies and errors of both sides, to calm the embittered feeling of the political parties." The first edition was produced within the leisure time of six or seven weeks. It formed a duodecimo volume of two hundred and fifty-two pages, of which about eighty were public documents. It was sold out immediately, and the author says, "I was preparing a new edition when the thrice-welcome news of peace arrived, which I thought would render it unnecessary." But he subsequently had good reason to change that opinion, by the demands that came in; and one edition after another was prepared, each one receiving some version or addition, until, within three and a half years, ten editions were struck off, there having been over ten thousand copies sold.

The next large work he produced, was, "The Vindiciæ Hibernicæ," which made its appearance

* Mr. Carey did not speak of this act, in after life, in any other way, than as an unjustifiable ebullition of passion.

in 1819. His object in writing this work was, to prove, among many other positions, that, from the invasion of Ireland by Cromwell, the government of that country had been marked by almost every species of "fraud, chicane, cruelty, and oppression;" that the Irish were, from time to time, goaded into insurrection; that they did not enjoy the free exercise of their religion; that the pretended conspiracy of 1641 was a miserable fabrication, and that the massacres, said to have been committed by the Irish in the insurrection of the same year, are unfounded in fact. There have been, and will continue to be, various opinions as to the success with which the author has made out his assumptions; but there is one thing, which everybody will be very ready to admit, viz, that the author brought great patience, perseverance, and industry, to its preparation, for he consulted not less than sixty different works, and made five hundred and ninety-six quotations. In Ireland, especially, the book received great praise, having been pronounced by the highest authorities, as "the best vindication of Ireland that was ever written."

Soon after the publication of his "Vindication of Ireland," he entered the lists in favor of "The Protective System of American Industry," and became for many years the untiring champion of that policy, in its broadest extent. He wrote a series of nine essays, which were published by a very reputable society, established in Philadelphia to aid in the encouragement of domestic industry. They were anxiously sought for by the friends of the system, and were generally copied into the newspapers north of the Potomac. Subsequently he brought forth numerous other writings, favoring the "Protective System," forming, in all, fifty-nine distinct publications, and embracing, in the whole, two thousand three hundred and twenty-two pages. Besides, he was always ready to put his hand in his pocket, and did so, to a very large extent, to aid in the advocacy of a system which he had embraced with such ardency. As was the case when he came out so warmly for a recharter of the former United States Bank, his efforts provoked many opponents, and won him also many warm friends, as was natural from the controverted nature of the subject which he so zealously advocated. Many public demonstrations of gratitude followed his labors, and there were, also, indications of public opinion, denunciatory of his toils and his views in no stinted terms.

In Professor Longfellow's "Hyperion," are to be found these beautiful and expressive sentences:

"It has become a common saying, that men of genius are always in advance of their age; which is true. There is something equally true, yet not so common, namely, that, of these men of genius, the best and bravest are in advance, not only of their own age, but of every age. As the German prose-poet says, 'every possible future is behind them.'"

In no inapt sense may we apply this to Matthew Carey. His penetration and sagacity seemed to keep him uniformly in advance of most others on great subjects of state and national importance. As a proof of this, we may quote what is stated by a worthy compeer, now living, viz: that "he was the first man in Pennsylvania to awaken public attention to the vast importance of a great system of internal improvements." He wrote pamphlets and circulated them, prepared a great many newspaper essays, and, finally, addressed letters to influential men in different parts of the state, inviting them to a meeting, to devise ways and means to secure, ultimately, the incalculable blessings of extended internal communication; and he lived, with many of his patriotic co-laborers, to witness the state of Pennsylvania not in the rear, at least, of any other member of the American republic, either in the extent or value of her internal intercourse.

The latter portion of Mr. Carey's life is too well known to need a detailment of its incidents. He took an active part in all the worthy charities of the day. He seemed to have an ambition to do good, and whenever he took hold of a cause, he brought to it the devotion of his early days. He was a bold and unceasing advocate of the great system of universal education, utterly repudiating the idea that there should be an education for the rich, and another for the poor, zealously declaring that he would have education as free as the genial air. His labors in behalf of the poor—constantly seeking both by his pen and his bounty to ameliorate their condition—were untiring and disinterested. Especially have poor widows, left with a family of little ones to support, cause to remember in thankfulness the ever-readiness with which his heart and his purse were open to their forlorn hopes. For a long series of years he had a charity-list, on which were enrolled the names of hundreds, to whom he regularly gave, once each fortnight, a donation of groceries and other necessaries of life; and where they are to find another such a friend as Matthew Carey—God only knows!

In the entire efforts of Matthew Carey, he ever appeared to act upon the principle, "to let good offices go round." In his more elaborate writings, what he regards as the great interests of his fellow-men, appear to form the leading motive in their composition. His last publication of any extent was a small volume, on the subject of domestic economy, entitled, "The Philosophy of Common Sense," the object of which was to imbody his experience, and the maxims of his career of fourscore years. In the preface he feelingly states, that it will probably be the last one he shall ever give to the public: and now that the prediction is reality, we may safely declare, if he had produced nothing else, this little work would raise for him an enduring monument, in proof of the philosophic and common-sense tone of his mind, and the benevolence and affection of his heart.

There was one feature in the life of Mr. Carey, which was of inestimable value to the young; and it cannot be too much commended to other gentlemen of leisure and ample fortune. It was a disposition to extend the hand of kindness to young men whom he observed of promising talents, justly ambitious, and systematically indus-

trious. He would go out of his way to meet such, and to make them feel that he respected and was ever ready to aid them. He had not a particle of that small cliqueism which is too often the disgrace of literary men, nor had he any of the false pride which unfortunately becomes the guiding power of many a man who has gone up to wealth by his own hands. On the contrary, his house, his counsel, his library, his heart, all were open to the young, the ambitious, and deserving; and many an enterprising citizen can go back and date the hour of his triumph to the unfaltering smiles which he ever met from the beaming countenance of Matthew Carey; and, as perseverance, industry, economy, and integrity, were the Corinthian columns of his own character, he delighted to impress upon his vast body of young friends, that upon none other could they ever rear enduring fame or substantial wealth.

Mr. Carey breathed his last, at his own residence in Walnut street, on the evening of Monday, the seventeenth of September, 1839, at the ripe age of eighty years. His having been, a week previously, overturned in his carriage, no doubt hastened the termination of his life. His funeral denoted the universal esteem of his fellow-citizens. It was one of the largest, excepting, perhaps, that of Stephen Girard, that ever occurred in Philadelphia. Many societies joined in the procession. The body was borne to St. Mary's church, where the solemn service of the dead was performed. The church was crowded to excess, thousands having come forth, spontaneously, to pay the last tribute of respect to one who ended his labors of benevolence only when he ceased to breathe!

"Such pass away; but they leave
All hope, or love, or truth, or liberty,
Whose forms their mighty spirits could conceive,
To be a rule and law to ages that survive."
Hunt's Merchant's Magazine.

CONSTITUTION AND GUERRIERE.

We find the following characteristic anecdote of the capture of the Guerriere, in the Springfield Republican. The correspondent says he gives it as he heard it in the circles of Virginia, and believes it has not before appeared in print.

A short time previous to her capture by the Constitution, the Guerriere had fallen in with, and taken a French prize. Among the passengers transferred to the deck of the Guerriere, was a French gentleman charged with despatches to the American government, who, on presenting himself to the British commander, was dispossessed of his books and papers and peremptorily ordered to go below.

Overwhelmed with this sudden and unexpected termination of his mission, the gentleman passed several days in great distress and agony of mind, which was not a little heightened by the haughty bearing and insolence of his victor. Once or twice, addressing him with his blandest manner and best English, he said:—

"Captain Dacre, I tank you, sare, for my government despatch and my law-books."

"Go below! you frog-eating, sallow-faced wretch!" was the only reply of the proud Briton.

Ere long, however, a sail was descried on the edge of the distant horizon. Her gradually increasing size gave token that she approached—and, as she neared to view, the tapering spars and the graceful trim of the yankee were seen.

Captain Dacre, with glass in hand, had observed her from a mere speck, and as soon as he was satisfied that she was American gave vent to the wildest expression of joy. He paced the deck with exulting step—swore he would take that ship in fifteen minutes—and to crown his anticipated triumph, directed that a hogshead of molasses be hoisted upon deck, to treat the d—d Yankees.*

Our Frenchman, who was meanwhile a silent though not an uninterested observer of what was passing before him, again put on his most winning smiles, and remarked:—

"Captain Dacre, sare, wid your permission I stay upon deck and see de fight."

"Go to the devil," responded the vain and self-conceited boaster—now busied in preparations for a bold and brilliant achievement.

Our hero was soon snugly esconced among the rigging; and the two vessels continued gradually and silently to approach each other. The Constitution having now got within reach of the enemy's long guns, the scene that followed is thus described by the lively Frenchman.

"Captain Dacre, he sail dis way, and den he sail dat way, and den he go—*boom!*

"De Yankee man, he say nothing—but still keep comin'."

"Again Captain Dacre sail dis way and den he sail dat way, and again he go—*boom!*

"Enfin, de Yankee man go pop, pop, pop, pop, pop, pop!†

"I say to Captain Dacre—Sare, wid your permission I go below—*'tis too hot here.*"

He went below; and the action continued.

When the firing ceased, our little Frenchman peeping up the hatchway, espied "one officer-like man, and Captain Dacre handing his sword." The truth flashed upon him in an instant. He rushed upon deck; and finding himself again at liberty, he capered about like one "possessed." Finally advancing to the now mute and fallen Dacre, he said, with an air which defies our humble pen:—

"You tell me, sare, you take dis ship in fifteen minute, *by gar*, HE TAKE YOU!"

"*Now*, sare," he added, with a low and bitter emphasis, "*I tank you for my government despatch and law-books.*"

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* Strange as it may appear, this order was actually obeyed And at almost the first shot the Constitution struck the hogshead its contents spreading over the deck conduced no doubt, to the Guerriere's defeat.

† It is proper to state, that after the first broadside, the action on the part of the Constitution was continued by *one gun at a time*—but in such rapid succession, that the captain of the Guerriere believed her to be on fire; and in consequence ordered a momentary suspension of operations.

Santa Claus, or St. Nicholas, in the act of descending a chimney on New-Year's Eve.

ST. NICHOLAS.

Good Reader! if you are a Knickerbocker, or the descendant of a Knickerbocker, we need not tell you that the jolly-faced figure upon the chimney top in our frontispiece, is your tutelar saint—the good St. Nicholas, *alias* Santa Claus, *alias* Senter Claas. Ever since the "Gude Vrow" cast her anchor in the bay of Mannahatta, St. Nicholas has been the most beloved of all the saints to the inhabitants of "Niew Amsterdam," particularly to the "rising generation." Benevolence is his chief attribute; and for every one of his wards, whatever may be their condition in life, he has a smile and a *kroller*, a *doughnut* or a thimble cake. But those yankee interlopers of whom the good old Diedric so mournfully complained, have weaned the votaries of St. Nicholas from their true, heartfelt affection; and those scenes of joy and festivity which characterized the season of his coming, have almost disappeared before the innovations of modern refinement.

Well do we remember the joy with which, in boyhood, we burst from the thraldom of the village pedagogue and hailed the Christmas morning as a time of jubilee indeed. With faith unshaken, the stocking was hung in the sooty chimney corner, and the pillow was pressed with a joyous assurance that a heterogenous mass of blessings, of all sorts and sizes, colors, tastes, and value, would greet our waking. Nor were boys and girls the only recipients of the joys of the Christmas holidays; but "children of larger growth" laid aside the cares and duties of domestic life, and engaged heart and soul in the general merry-making. The flail of the husbandman and the wheel of the spinster were silent—the hammer of the artisan and the needle of the seamstress were idle, and the jingle of bells, the merry laugh, the song and story, proclaimed a general gala-day at the court of the king of storms. At evening, the trident candle illuminated the "spare room" and nuts and cider, *prinktums* and contra dances, pawns and riddles, bright eyes and rosy cheeks,

"Like kindred drops were mingled into one."

Such was, formerly, *social* life, and its effects upon society were truly salutary. Those prominent features of self-conceit which are apt to peer above our republican professions where unnecessary etiquette characterizes a community, were almost unknown; and patrican and plebian feelings and distinctions were scarcely recognized in the passions and pursuits of our rustic sires.

But alas! the glory of St. Nicholas has departed—his six reindeer steeds are reduced to two—his doublet is the "worse for wear," and a "nipping frost" hath touched his popularity. As a true scion of the Knickerbocker stock, we lament these signs of decadence; and, as a proof of our sincerity, we have employed the hand of art to preserve the remembrance of his features and attributes from oblivion. With pious hands we have deposited the cherished production in our family magazine, where it shall remain, a precious legacy for our—"executors, administrators, and assigns."

THE AMERICAN COTTON-TRADE.

BY JAMES H. LANMAN, ESQ.

It is well known that a wide and fertile tract of territory stretches along the southern borders of our republic, from the Florida coast to the gulf of Mexico, even beyond the Mississippi, that is distinguished by moral and physical features that are entirely different from those of any other part of the country. These moral features, although depending in some measure upon the stock from which the population is derived, are more directly attributable to a particular mode of the cultivation of the soil. The tract to which we allude is comprised within the states of Virginia and and North Carolina, Florida and South Carolina, Georgia, Louisiana, Mississippi, and Tennessee, Alabama and Arkansas, which may be considered the cotton-growing region of the republic. This extensive portion of the domain, consisting in great part of an alluvial land, is warmed by a vertical sun, and is adorned with magnificent vegetation. Groves of the palmetto, with lofty branches and broad leaves, are spread through its level plains and swamps, like the tasselled ruins of sylvan temples. Forests of the magnolia, with their snow-white flowers, lift themselves in beauty and grandeur toward the heavens, and canebrakes oppose impassable barriers even to the progress of the elk and the deer. Flowers of varied hue bloom amid the low woodlands, and the orange sends forth its fragrance upon the marshes, bayous, and everglades. But the sun that quickens the vegetation into luxuriance, calls forth from this varied beauty the seeds of pestilence. The turbid and sluggish streams, which serve to enrich their banks, roll up a miasmatic vapor which bears death upon its wings, and harbor uncouth reptiles and swarms of noxious insects Even in its refined and intelligent metropolis, the the city of Charleston, the turkey-buzzard is made a scavenger, and is permitted to fly through the streets, and to prey upon the garbage which even the negro is too much occupied to clear away.

We shall here attempt to sketch the progress and the present condition of the cotton-trade in that portion of the country, constituting as it does the principal object of its agricultural enterprise, and a species of product the most prolific of wealth to the nation. The importance of this traffic, and the great proportion which it bears to the total amount of our commerce, is obvious to all who are acquainted with our general trade. Not only are the wharves and storehouses of our principal seaports crowded with its bales, but if we examine the cargoes of the ships which are constantly setting sale from our docks for foreign countries, we shall perceive that cotton constitutes in value the greatest proportion of the freights that are exported abroad. Even the manufacturing establishments which are beginning to be scattered upon the waterfalls of our northern states are, in the main, fed by the products of southern cotton-plantations, and upon those products they must continue to depend for their future supplies.

The vegetable production known by the name of the cotton-plant is clearly destined to be the

most useful and widely diffused of any product of the soil, used in manufacture. The downy softness and fineness of its texture, and its flexibility, which enables it to be spun into a minute thread, and to be wrought into manufactured fabrics, equally remarkable for beauty, pliancy, and cheapness, the extent in which it is required for dress, and the abundance in which it may be produced, all exhibit combined advantages that render it of the greatest value to man. It possesses striking advantages over linen, in the fact that it is cheaper and is more comfortable and healthful for a changing climate, and would supersede its use without inconvenience were the latter fabric stricken from the products of manufacture. It is a bad conductor of heat, and, in consequence, preserves the body at a more equable temperature. It is in color white, of a cream color, or possesses sometimes a yellowish hue; but the former, it is well known, is the most common in our markets. The annual herbaceous cotton, comprising the principal product of our southern states, and distinguished from the cotton tree, is enclosed in pods, which are ripened and burst open by the action of the sun when it reaches to a fit state for gathering.

And this production, although comparatively recently introduced into this country, has been long known. It has been stated by an English writer that it was manufactured as early as linen was used in Egypt, and if we may credit the authority of Herodotus, it was known even before his day. In his account of the Indians, he says: "They possess, likewise, a kind of plant, which, instead of fruit, produces wool of a finer and better quality than that of sheep. Of this the Indians make their clothes." Other accounts equally authentic clearly show that the cotton was used as an article of dress, during the time of ancient Greece. In the age of Pliny, it was known in Upper Egypt, and also upon the island of Tylos, in the Persian Gulf. In his description of that island, this writer, in alluding to its productions, mentions certain wool-bearing trees, that "bear a fruit like a gourd, and of the size of a quince, which, bursting when it is ripe, displays a ball of downy wool, from which are made costly garments, of a fabric resembling linen."

The first account of this production as an article of commerce, however, is derived from Arian, an Egyptian Greek, who lived during the first or second year of the Christian era, and who sailed around the coast from the Red sea to the farthest extremity of India. This writer, in describing the trade of several Indian towns with the Arabs and the Greeks, alludes to the fact that the Arab traders brought Indian cottons to Aduli, a port of the Red sea; and that even the ports beyond the Red sea carried on a large trade with the marts near the northwestern coast of India, and received, among other things, cotton goods of various kinds; and that the interior and remote provinces of India were distinguished for the manufacture of cotton piece-goods. He also eulogizes the muslins of Bengal, that were made upon the borders of the Ganges. The production as well as the manufacture of cotton thus spread to Persia and Egypt, and cotton clothing was soon introduced into Arabia. While the manufacture of this article was spread by the influence of the Mohammedan conquests, it became known throughout western Asia during the middle ages.

It appears, from well-accredited statements, that the cotton plant has been long known throughout the Chinese empire. Although, previous to the thirteenth century, it had been produced, it was only cultivated in gardens as a rarity, and not as a staple of commerce. After the conquest of the country by the Tartars, this cultivation was increased to common use, and was gradually extended throughout the empire, so that at the present time the cottons of China, and especially the nankeen, have attained a wide distinction, although sufficient is not raised in the empire for its own consumption, and large importations are required to be made from Bombay and other portions of India. The dress of the humble classes of that country is principally composed of cotton, died of a blue color, while that of the more opulent consists of rich silks. In this as well as other warm countries, the cotton plant grows abundantly, and it accordingly seems to be a fabric eminently adapted to such a climate.

That this staple is indigenous to America, there appears to be but little doubt. When the country was discovered by the Spaniards, it was found growing in considerable perfection in its southern part, and then constituted the chief article of dress among the Mexicans, as they produced neither wool, hemp, nor silk, and even the flax which was cultivated in their country was not used at all for the purpose of clothing. "Of cotton," says the Abbe Clavigero, "the Mexicans made large webs, and as delicate and fine as those of Holland, which were, with much more reason, highly esteemed in Europe. They wove their cloth of different figures and colors, representing different animals and flowers. Of feathers interwoven with cotton, they made mantles and bed curtains, carpets, gowns, and other things not less soft than beautiful. With cotton also they interwove the finest hair of the belly of rabbits and hares, after having made and spun it into thread: of this they made most beautiful cloths, and, in particular, winter waistcoats for the lords." The cotton plant was also found growing wild in Hispaniola, and other of the West India islands, and in South America, by Columbus; and in 1519, the Brazilians were accustomed to make their beds of the cotton. It seems to be admitted on all sides that the cotton plant is indigenous, not only to India but America, and the manufacture of this staple, in South America, is supposed to be coeval with the first colonization of that part of our continent.

The value of this species of product as the *material* of manufacture was soon discovered and spread abroad throughout some of the most prominent nations of Europe. Extended through a portion of Asia, Africa, and America, we find the cotton plant and manufacture introduced by the Moors into Spain during the tenth century, and

flourishing in the beautiful provinces of Andalusia and Catalonia, where the Spanish Arabs succeeded in making paper of this substance. To Italy the cotton manufacture was extended about the fourteenth century, but from the imperfect condition of the manufacturing machinery at that time, it must necessarily have been in a low and depressed condition; and it continued in this depressed state until the era of invention in England, by which the power of machinery furnished the largest means and motives for its manufacture.

As England was among the latest countries to receive the cotton manufacture, it having been previously successfully introduced into Italy, Spain, the Low Countries, Saxony, Bavaria, Prussia, and Turkey, so also that empire has outstripped all other nations in the success with which it has cultivated this branch of enterprise. The precise period in which cotton was first imported into that country is unknown. For a long time it had been introduced in small quantities, that were used as candlewicks; but, during the commencement of the sixteenth century, it was supplied as a regular importation, and, as early as 1641, its manufacture had become well established in Manchester. The cotton goods supplied by English factories, not only furnished a large stock of its wrought fabrics for the home trade, but also supplied this article, beside cotton wool and cotton yarn, as a regular exportation to the distant markets of the Levant, and the introduction of the manufacture is traced to the Flemish protestant emigrants. The first freights appear to have been exported from Genoa, Sicily, the Levant, and Flanders. At that period the state of the manufacturing art was so low, that it could not have arrived to any considerable degree of perfection, or have been advanced to any very profitable results. The manufacturing arts, which modern times have so much improved, were comparatively rude; and the commerce, which modern civilization has spread to every sea, multiplying the wants of men, and, in consequence, the motives of commercial enterprise, was then limited in its influence, as contrasted with its present state.

We have sketched this brief outline of the cotton production and manufacture abroad, for the purpose of showing its general condition before it was introduced into our own country; and we now pass directly to a consideration of the progress of the cotton trade in the United States. It is somewhat extraordinary that the capacity of our country to produce this plant should have been so long unknown. There is ample evidence to show that it was only until a late period that the colonies that had spread themselves along our southern border, were themselves aware of the advantages of their own soil in the production of this article. Dr. Hewatt, in his account of South Carolina, that was printed in 1719, had, indeed, suggested that "the climate and soil of the province were favorable to the culture of cotton;" but this statement was probably regarded as a vague conjecture, and it led to no practical results, for we find its cultivation for many succeeding years disregarded, or at least not practised upon. The colonies of Georgia and South Carolina, which seem to have had the precedence in first introducing it, were contented to apply their enterprises to the production of other articles; and, for many years, no effective measures appear to have been undertaken for the purpose of testing the capacity of the soil in this respect. Farther suggestions were made afterward by the first provincial congress of South Carolina, that was held in January of 1775, which recommended to the inhabitants of that country "to raise cotton;" but little attention was paid to this advice, as the people would not raise cotton, either for their own consumption, to any considerable extent, and none, in fact, for exportation.

The state of Georgia, it appears, took the lead in the cultivation of this staple, but it was produced only in little fields and gardens, for domestic use, and more as a matter of experiment and taste than as a source of solid wealth. But since it was soon found that the soil yielded this article in great abundance, and the extension of the cotton manufactories in England furnished an increased demand for the staple, the production was much increased. Perceiving the success with which this cultivation had been introduced into Georgia, the state of South Carolina was not backward in emulating the example of the bordering state. Previous to the war of the revolution, it appears that not a single pound had been raised for exportation; and it is a somewhat remarkable fact, when we consider the United States has exceeded all other nations in the amount which this country is annually exporting to the English manufactories, that in 1784, an American vessel arrived at the Liverpool dock, with eight bags of North American cotton, which were immediately seized by the customhouse officers, because it was believed that this small quantity was not the produce of the United States. From the imperfect mode of cultivation, and the want of means to prepare it for the market and to separate it from the seeds, the cotton that was exported seems to have been of a poor quality, and was accordingly held in but slight estimation.

Even at that period the capacity of the United States for the production of cotton was not generally understood. We are informed that Tench Coxe, to whom the country is greatly indebted for important services connected with its manufacturing interest, having certain connexions residing in Talbot county, Maryland, was struck with the fact that cotton wool was raised in the little family gardens of the children and domestics, not so much for use as for amusement and ornament, and that fact impressed his mind with a firm conviction that the culture could be generally and profitably introduced into the southern portion of the country; a conviction that was made more clear from the vast improvements which had then been recently introduced into England in the interest of manufacture, and especially in labor-saving machinery. Subsequent to the convention in Annapolis, during the year 1786, a consultation was held by those best qualified to judge of the cotton-growing capacity of

that part of the country, and the result of the consultation was a decided impression that this production could be cultivated. Mr. Madison, who was a member of that body, after a due examination of the facts, is understood to have been convinced of the same result. From that time the minds of men appear to have been more directly turned to the subject, and cotton, as an American staple, began to be generally and successfully cultivated.

It may be proper here to advert to a singular circumstance connected with the introduction of the sea-island cotton, which we shall hereafter describe, into this country. Patrick Walsh, a planter in Havana, having settled in Kingston, Jamaica, where he had removed from the Bahama islands, there found an old friend who was here established, with his family and negroes. Being in a depressed condition, he applied to Walsh for advice regarding the steps that he should take for the employment of his slaves. He was told that some of the outer islands of Georgia presented an opening, and that he might with advantage place himself upon that point, and devote his time to the planting of provisions until some fortunate circumstance should occur. This advice was, however, neglected; and he finally concluded to establish himself in the Bahamas, and engage in planting cotton. He was warned of the attempt, but after some delay, concluded to advance to that place for this purpose. Becoming discouraged with his prospects at this point, he was soon led to proceed to Georgia, in accordance with the former suggestion of his friend. Having established himself in this state, he received, from Walsh in the spring of 1786, several packages of seeds from Jamaica, and among other kinds, three large sacks of Pernambuco cotton seed. No use appears, however, to have been made of these seeds, until three years after, in 1789, when the sacks being required for the purpose of gathering in his other provisions, their contents were emptied upon a neighboring dunghill. The season being wet, a great number of plants were found covering the spot during the spring. These plants, having been carefully drawn out, were planted upon a tract of two acres, which were found to thrive beyond his most ardent anticipations, and he was induced to renew the experiment by planting more, and exercised all his energy, not only in extending but in cleaning the crop; and from the crop of 1789, he succeeded in gathering several tuns of clean cotton. From this fact may be traced the introduction of the sea-island cotton into the United States. About this period, the upland, or bowed Georgia cotton, to which we shall hereafter refer, was successfully introduced, and cultivated to a considerable extent; and from that time, the production of cotton, as a systematic branch of enterprise, was permanently established in the country.

The inventions to which we have before alluded as having taken place in England, leading to the improvement of manufacturing machinery, cast a new era over the condition of manufacturing enterprise, and tended effectually to work out important changes in the production of cotton. Sir Richard Arkwright had taken out his patent for the spinning frame. Hargrave had framed the spinning jenny, which he claimed as his discovery; and also the mule spinning, which he invented, and that was subsequently perfected by Crompton. And James Watt, as early as 1790, had applied his steam-engine for the propulsion of machinery—an engine that was soon introduced into cotton factories; while Cartwright succeeded in getting his power-looms in motion. These combined inventions exerted, of course, a powerful influence in increasing the amount of manufacture, and the market for manufactured goods; for it must be admitted that the wants of men, in the use of manufactures, increase in proportion as they are satisfied—extravagance, like other bad habits, growing by what it feeds on. What are luxuries in one age become necessary articles of use in the next, as the means of general supply are multiplied. The coarse cotton gives place to the fine linen, and the coarse fustian yields to the broadcloth. Thus it was in England, and thus it has been in this country. The people who were formerly accustomed to wear only the plainer cloths, as soon as the improvements in machinery and the consequent improvement of manufacture enabled them to wear finer at the same expense, still kept on increasing in the cost of their dress; and if but little benefit was produced to their pockets by that continuance, an advantage was at least gained to the manufacturer by the great enlargement of the consumption. Thus machinery, while it saved the labor, contributed also to the extravagance as well as the comfort of men.

An important change was soon effected in the cultivation of cotton, by increasing the motives of its production, and the profits that would thus necessarily accrue from that cultivation, which was, the invention of the saw-gin, by Eli Whitney. This individual, a native of Westborough, Massachusetts, gave early indications of mechanical genius; and, although a graduate of Yale college in 1792, appears to have directed his mind less to literature than to mechanical philosophy. Upon taking his degree, he was cast upon the world to make his way, and soon entered into an engagement with a citizen of Georgia, to reside in his family as a private tutor. On his his arrival in that state, to conform to that engagement, he met with a severe misfortune at the threshold, for he was informed that another teacher had been employed. He was thus left without resources or friends. He fortunately here met the family of General Greene, then residing in Savannah. "My young friend," said that gentleman to Whitney, "make my house your home, and pursue what studies you please." This generous offer was very promptly accepted by Mr. Whitney, who soon commenced the study of the law under that roof, employing the intervals of relaxation in a devotion to mechanical pursuits; and among other articles, he succeeded in making his hostess a tambour frame, which at this time excited much attention. At this period, the family of General Greene were accustomed

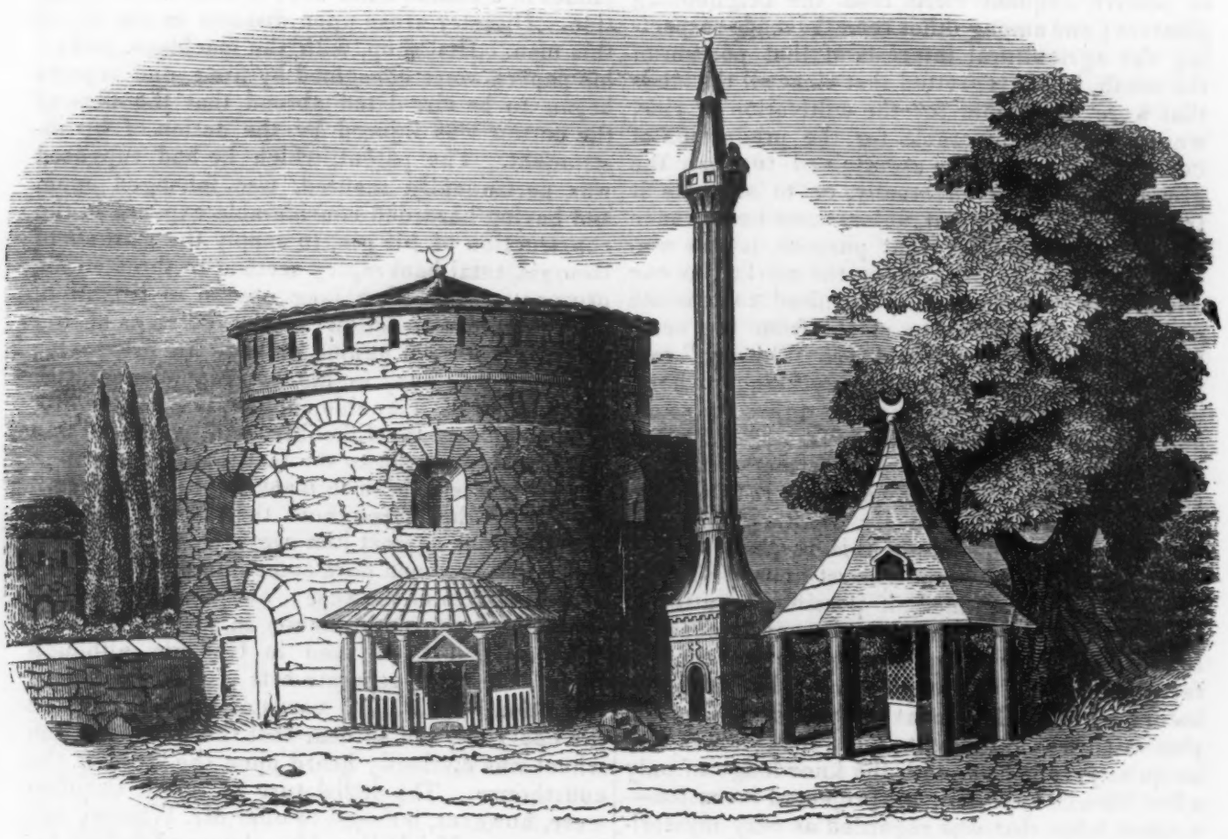
to receive frequent visits from the neighboring planters; and among other remarks made respecting the agricultural interests of that portion of the south, it was regretted that since all the lands that were unsuitable for the cultivation of rice, were eminently favorable for the production of cotton, no means were ascertained to clean the green seed-cotton effectually, or to separate it from the seed; and that, unless some contrivance should be adopted for that purpose, it was useless to attempt to raise it for the market, as one day's work was frequently required to separate one pound of the clean staple from the seed. "Apply to my young friend, Mr. Whitney," said Mrs. Greene, "he can make anything;" whereupon she conducted them to an adjoining room, and showed them her tambour frame, and other ingenious toys, which he had wrought for her children. The visiters who chanced to be present were then introduced to Mr. Whitney, who disclaimed any excellence in this respect. But a new object of ambition now burst upon Whitney's vision. He determined, if possible, to attempt the invention of the cotton-gin, and proceeded to Savannah, searching among the warehouses for specimens of the staple, which he had never before seen. A basement story upon a Georgia plantation was assigned to him for his labors, and he quietly toiled on, with the knowledge of only a few friends, to perfect his projected invention—a silent labor that was regarded as very mysterious by those who were unacquainted with the secret. Near the close of the winter, the machine was completed so far that its success was made almost certain. The discovery was regarded with enthusiasm, as the state was in a depressed condition, owing to the want of occupation for the negroes, and its products were scarcely sufficient for the substantial support of the white inhabitants. The machine having been at last got ready, a temporary fabric was erected for its exhibition; and a number of spectators having been collected from different parts of the state, it was perceived by this instrument more cotton could be separated from the seed by a single hand than by the old method in many months. Bright prospects soon opened upon him. The machine destined to develop vast resources of wealth to the state was regarded with a general and deep interest; and multitudes flocked to the place where it existed, in order to witness its operation. But it was deemed even imprudent to exhibit it to the public, as the patent right had not been taken out.

By one of those infamous acts which are stamped with the blackest injustice, Whitney, when he had just entered into partnership with a friend, in order to push the results of his invention to those points whereby he might reap some portion of its benefits, then having relinquished the profession of the law, was nearly cut off from all the advantages that he should have derived from the exertions of his genius. The people in the neighborhood, against law and decent morality, entered the building at night, and carried away the instrument; and before Whitney could complete his model or secure his patent, a number of machines of a similar kind were in successful operation. Disaster arose upon disaster in the life of this man. His shop, with the machines, and all his papers, were consumed by fire; and reports began to be circulated abroad that the fibre of the cotton was injured by the action of his instrument. The patent, which he had supposed was permanently secured, was infringed upon, and having hazarded considerable expense in the construction of his gin, to supply the markets of Georgia, total bankruptcy seemed to threaten his prospects. Indeed, a long course of litigation, which appears to follow in the footsteps of too many inventors of genius, clouded his prospects; and Mr. Whitney, in his correspondence with Robert Fulton, upon this subject, in a desponding tone, attributes the difficulties with which he was obliged to contend, to the fact that there was a "want of disposition in mankind to do justice." He alleges that throughout the state of Georgia combinations against him were regularly organized; that few men dare come into court, to testify to the facts of the case; and that in one instance he had great difficulty in proving that his machine had been used in Georgia, although there were three separate sets of that machinery in motion within fifty yards of the place where the court sat, and so near that the rattling of the wheel was distinctly heard upon the steps of the courthouse. The legislature of South Carolina were, however, induced to offer Mr. Whitney and his partner, Mr. Miller, fifty thousand dollars for the use of his machine; and a sale of the patent right for that state was also negotiated with the state of North Carolina, the consideration of which is understood to have been promptly paid; and a like arrangement was afterward made with Tennessee. The success of the machine was, however, fully demonstrated, and the eagerness with which it was hailed manifested itself throughout the state of Georgia as soon as it was finished. The planters of that state, perceiving that new impulse was to be given to their prospects in the cultivation of cotton, by this instrument, entered deeply into the matter, and in 1794, were willing to borrow large sums of money, at five per cent. premium, beside the lawful interest, in order to extend this species of agriculture; while Whitney earned the credit of giving a spring to the agriculture of the south in that species of enterprise, which has been handed down unimpaired to our own day,—a credit that will endure while the cotton plant whitens the plantations of the south with its snowy harvests, or the machinery of the cotton factory clatters upon the waterfall!

(To be continued.)

There is nothing so easy as to be wise for others—a species of prodigality, by-the-by, for such wisdom is apt to be wholly wasted.

Always be as witty as you can with your parting bow—your last speech is the one remembered.



The Rotundo at Thessalonica.

TURKISH CITIES.

THESSALONICA, OR SALONICA.

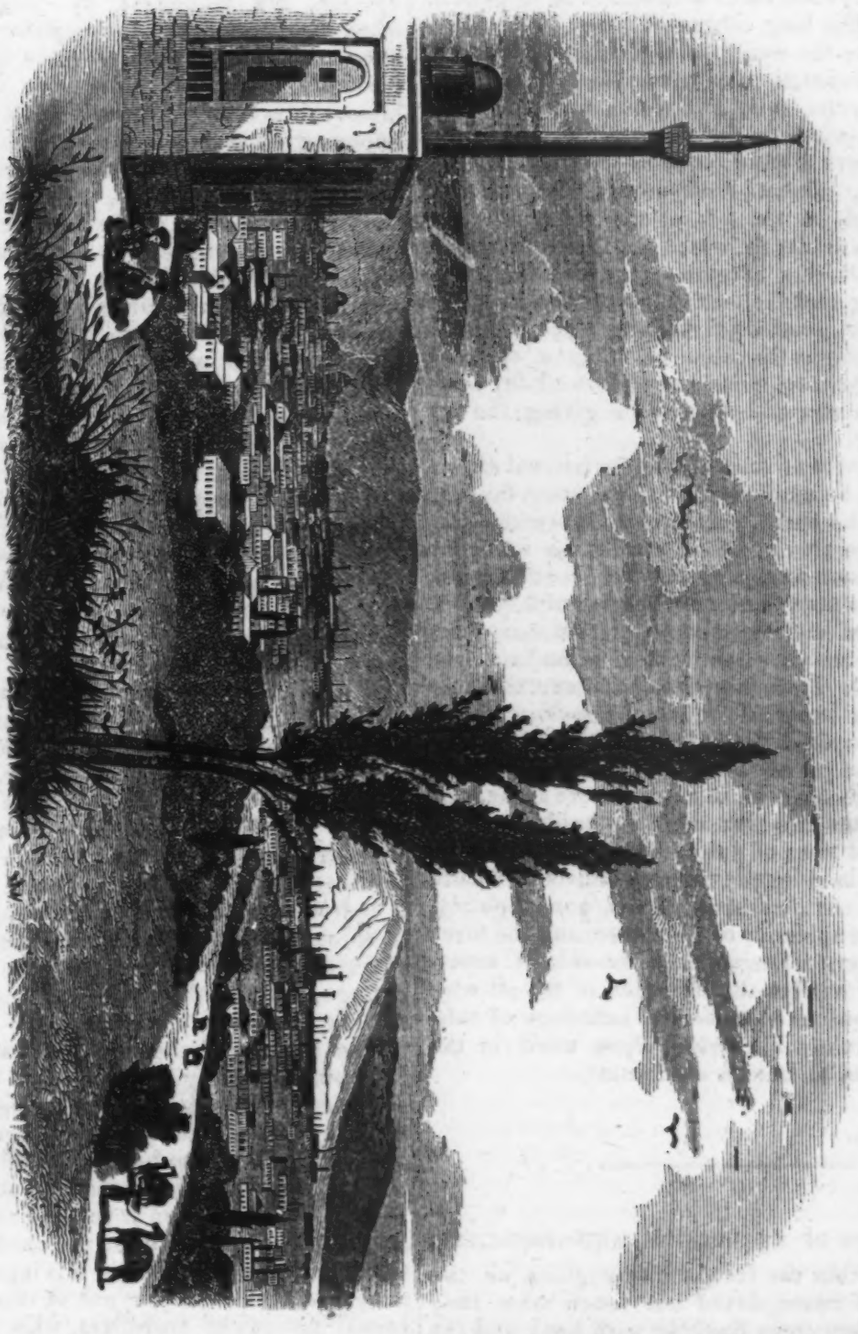
The situation of Thessalonica, on a fine eminence on the Thermaic Gulf, with a slope which exposes it advantageously to the view of one approaching it by water, renders it conspicuous and attractive from a distance, but as it lies out of the principal routes of travellers in our day, it is still but seldom visited. The date of this ancient tower, we believe, has never been determined, but is allowed to be very early. The name of the city was Therme, in the time of Herodotus and some subsequent writers, having probably been derived, as well as that of the bay which it overlooks, from warm springs: to which the celebrated pass of Thermopylæ owes its appellation. It is also said to have been once called Halia. The name of Thessalonica was given by Cassander, in honor of the daughter of Philip, whom he had married.

Under the Romans this city became an important port, for the commerce of Asia Minor and the Hellespont, and soon increased to a large city, exceeding all others in Macedonia, and enjoying peculiar privileges. In the first century of the Christian era, it was a considerable place, though probably inferior to Phillipi. The account of Paul's first visit to it, in the seventeenth chapter of Acts, though brief, is interesting, and shows the spirit with which he was received by many of the inhabitants.

The ancient tower we here present, has been the witness of great revolutions in modern as well as in early ages. This is one of the few remnants of antiquity in that city, whose name is so familiar to every reader of the New Testament. It was constructed of large, square stones, and its appearance in the engraving indicates no less its exposure to the elements for hundreds of years, than that solidity of architecture which has enabled it to resist the attacks of time and violence. The crescent on the top, with surrounding Mahometan buildings, plainly indicates the gloomy power which now occupies that site of one of the primitive churches.

Thessalonica, after passing into the hands of different masters in successive ages, yielded, with all Greece, to the miserable and degrading rule of the Turks. Among the Greek population who were found there in late years, were several families warmly devoted to national freedom, and possessing a spirit which engaged them in the earliest plans for the liberation of their countrymen. The neighborhood of the mountains, and their almost inaccessible nature, offered great facilities to such as were inclined to the wild and independent life of the Kleftes; and among those patriotic men were found some of the best of the Thessalonians.

The modern name of the city is Salonica, a very natural abbreviation from the ancient; and, the accent being laid on the letter *i*, and that being pronounced *e*, the American reader may easily determine how the name of the city was probably spoken in former times.



View of the City of Broosa.

BROOSA OR BRUSAH.

This large, populous, and busy town, although now hardly second to any other in the Turkish dominions, and formerly the capital, for one hundred and thirty years before the capture of Constantinople, occupies a site undistinguished in ancient days.

We have but to figure to ourselves the extensive and irregular terrace which occupies that important part of the interior of Asia Minor, where were situated the countries of Galatia, Cappadocia, Phrygia, and Lycaonia, with the cities of Lystra, Derbe, Iconium, and Antioch of Pisidia. The plain is bordered by mountains on three sides, being open only toward the east, having Olympus on the north, and Taurus on the south. Mr. Schreider speaks of noble forests of oak and birch on the north, and yellow pine on the sides of some of these mountains.

From its borders the land descends by gradual slopes toward the shores of three seas: the Black, Ægean, and the Mediterranean; and in those regions were found the ancient Pontus, Bithynia, and Pamphylia on the north; on the west, Lydia, Mysia, and Troas; and on the south, Caria, Lycia, Cilicia, and Paphlagonia. Within those districts are the sites of nearly twenty cities of antiquity, whose names we find in the Scriptures.

The situation of Broosa is near one corner of the broad terrace above mentioned, and at the foot of the range of Olympus. Our countryman, Mr. Goodell, in describing the scene as he enjoyed it from one of those elevations, speaks of it as exceeded by nothing in the whole empire except the capital itself. Turning our eyes to the engra-

ving, we may form some conception of its general features. The long ranges of many of the buildings, indicate the wealth of the inhabitants; some of the numerous slender towers shooting above, serve the criers, who five times a day, call the moslem to prayers in the name of Mahomet, and here and there a wide dome shows the position of a mosque. One of these minarets may be seen near at hand, on the left of the print, with the narrow balustrade, in which the crier takes his stand, after having ascended by a winding staircase within; and the two indolent Turks on the terrace below, smoking their long pipes, are such figures as might be seen in many a splendid mansion in the city, quiescent almost all day long, except when roused by his voice giving the cry of Illaillahee.

The provinces of Asia Minor, for natural attractions, are to be numbered with the most favored portions of the earth. At present, notwithstanding the oppressive and even desolating influence of the government and of the dominant religion, they are estimated to contain upward of 4,000,000 of people, and anciently the population must have been much greater. Asia Minor, when traversed by the apostle Paul, is said to have contained no less than five hundred rich and populous cities, connected together by public highways substantially built and paved. There paganism and civilization, though opposed in nature, were associated perhaps in the highest degree possible. The doctrines and rites of polytheism were embellished and sustained by the highest efforts of wealth and genius. Art, learning, riches, power, policy, prejudice, the splendor of literature, and the force of genius, were all arrayed on the side of superstition; as if it were the intention of the all-wise God to demonstrate the baleful influence of mistakes concerning his nature upon mind in the highest stages of human cultivation.

INTRODUCTION OF TEA, COFFEE, AND CHOCOLATE.

It is said that the frozen Norwegians, on the first sight of roses, dared not touch what they conceived were trees budding with fire: and the natives of Virginia, the first time they seized on a quantity of gunpowder, which belonged to the English colony, sowed it for grain, expecting to reap a plentiful crop of combustion by the next harvest, to blow away the whole colony.

In our own reflection, strange imaginations impeded the first period of vaccination; when some families, terrified by the warning of a physician, conceived their race would end in a species of Minotaurs,—

Semibovemque virum, semivirumque bovem,—

we smile at the simplicity of the men of nature, for their mistaken notions at the first introduction among them of exotic novelties; and yet, even in civilized Europe, how long a time those whose profession, or whose reputation, regulate public opinion, are influenced by vulgar prejudices, often disguised under the imposing form of science! and when their ludicrous absurdities and obstinate prejudices enter into the matters of history, it is then we discover that they were only imposing on themselves and on others.

It is hardly credible that on the first introduction of the Chinese leaf, which now affords our daily refreshment; or the American leaf, whose sedative fumes made it so long a universal favorite; or the Arabian berry, whose aroma exhilarates its European votaries; that the use of these harmless novelties should have spread consternation in the nations of Europe, and have been anathematized by the terrors and the fictions of some of the learned. Yet this seems to have happened. Patin, who wrote so furiously against the introduction of antimony, spread the same alarm at the use of tea, which he calls "l'impertinente nouveaute du siecle." In Germany, Hanneman considered tea-dealers as immoral members of society, lying in wait for men's purses and lives; and Dr. Duncan, in his treatise on hot liquors, suspected that the virtues attributed to tea were merely to encourage the importation.

Many virulent pamphlets were published against the use of this shrub, from various motives. In 1670 a Dutch writer says it was ridiculed in Holland under the name of hay-water. "The progress of this famous plant," says an ingenious writer, "has been something like the progress of truth; suspected at first, though very palatable to those who had courage to taste it; resisted as it encroached; abused as its popularity seemed to spread; and establishing its triumph at last, in cheering the whole land from the palace to the cottage, only by the slow and resistless efforts of time and its own virtues."

The history of the tea-shrub, written by Dr. Lettsom, is usually referred to on this subject; I consider it little more than a plagiarism on Dr. Short's learned and curious dissertation on tea, 1730, 4to. Lettsom has superadded the solemn trifling of his moral and medical advice.

These now common beverages are all of recent origin in Europe; neither the ancients nor those of the middle ages tasted of this luxury. The first accounts we find of the use of this shrub are the casual notices of travellers, who seem to have tasted it, and sometimes not to have liked it; a Russian ambassador, in 1639, who resided at the court of the mogul, declined accepting a large present of tea for the czar, "as it would only encumber him with a commodity for which he had no use." The appearance of "a black water" and an acrid taste seems not to have recommended it to the German Olearius in 1633. Dr. Short has recorded an anecdote of a stratagem of the Dutch in their second voyage to China, by which they at first obtained their tea without disbursing money; they carried from home great store of dried sage, and bartered it with the Chinese for tea; and received three or four pounds of tea for one of sage: but at length the Dutch could not export sufficient quantity of sage to supply their demand. This fact, however, proves how deeply the imagination is concerned with our palate, for

the Chinese, affected by the exotic novelty, considered our sage to be more precious than their tea.

The first introduction of tea into Europe is not ascertained; according to the common accounts, it came into England from Holland, in 1666, when Lord Arlington and Lord Ossory brought over a small quantity; the custom of drinking tea became fashionable, and a pound weight sold then for sixty shillings. This account, however, is by no means satisfactory. I have heard of Oliver Cromwell's tea-pot in the possession of a collector, and this will derange the chronology of those writers who are perpetually copying the researches of others, without confirming or correcting them.

Amid the rival contests of the Dutch and the English East-India companies, the honor of introducing its use into Europe may be claimed by both. Dr. Short conjectures that tea might have been known in England as far back as the reign of James I., for the first fleet set out in 1600; but, had the use of this shrub been known, the novelty had been chronicled among our dramatic writers, whose works are the annals of our prevalent tastes and humors. It is rather extraordinary that our East-India company should not have discovered the use of this shrub in their early adventures; yet it certainly was not known in England so late as in 1641, for in a scarce "Treatise of Warm Beer," where the title indicates the author's design to recommend hot in preference to cold drinks, he refers to tea only by quoting the Jesuit Maffei's account, that "they of China do for the most part drink the strained liquor of an herb called *chia*, hot." The word *chia* is the Portuguese term for tea retained to this day, which they borrowed from the Japanese; while our intercourse with the Chinese made us no doubt adopt their term *theh*, now prevalent throughout Europe, with the exception of the Portuguese. The Chinese origin is still preserved in the term *bohea*, tea which comes from the country of *vouhi;* and that of *hyson* was the name of the most considerable Chinese then concerned in the trade.

The best account of the early use, and the prices of tea in England, appears in the hand-bill of one who may be called our first *tea-maker*. This curious hand-bill bears no date, but as Hanway ascertained that the price was sixty shillings in 1660, this bill must have been dispersed about that period.

Thomas Garway, in Exchange-alley, tobacconist and coffee-man, was the first who sold and retailed tea, recommending it for the cure of all disorders. The following shop-bill is more curious than any historical account we have:—

"Tea in England hath been sold in the leaf for six pounds, and sometimes for ten pounds the pound weight, and in respect of its former scarceness and dearness it hath been only used as a regalia in high treatments and entertainments, and presents made thereof to princes and grandees till the year 1657. The said Garway did purchase a quantity thereof, and first publicly sold the said tea in *leaf* or *drink*, made according to the directions of the most knowing merchants into those eastern countries. On the knowledge of the said Garway's continued care and industry in obtaining the best tea, and making drink thereof, very many noblemen, physicians, merchants, &c., have ever since sent to him for the said leaf, and daily resort to his house to drink the drink thereof. He sells tea from 16*s.* to 50*s.* a pound."

Probably tea was not in general use domesti cally so late as in 1687; for in the diary of Henry, earl of Clarendon, he registers that "Pere Couplet supped with me, and after supper we had tea, which he said was really as good as any he had drank in China." Had his lordship been in the general habit of drinking tea, he had not, probably, made it a subject for his diary.

While the honor of introducing tea may be disputed between the English and the Dutch, that of coffee remains between the English and the French. Yet an Italian intended to have occupied the place of honor; that admirable traveller Pietro della Valle, writing from Constantinople, 1615, to a Roman, his fellow-countryman, informing him, that he should teach Europe, in what manner the Turks took what he calls "*cahue*," or as the word is written in an Arabic and English pamphlet, printed at Oxford, 1569, on "the nature of the drink *kauhi* or coffee." As this celebrated traveller lived in 1652, it may excite surprise that the first cup of coffee was not drank at Rome: this remains for the discovery of some member of the "Arcadian society." Our own Purchas, at the time that Valle wrote, was also "a pilgrim," and well knew what was "*coffa*," which "they drank as hot as they can endure it; it is as black as soot, and tastes not much unlike it, good they say for digestion and mirth."

It appears by Le Grand's "Vie privee des Francois," that the celebrated Thevenot, in 1658, gave coffee after dinner; but it was considered as the whim of a traveller; neither the thing itself, nor its appearance, was inviting: it was probably attributed by the gay to the humor of a vain philosophical traveller. But ten years afterward a Turkish ambassador at Paris made the beverage highly fashionable. The elegance of the equipage recommended it to the eye, and charmed the women: the brilliant porcelain cups, in which it was poured; the napkins fringed with gold, and the Turkish slaves on their knees presenting it to the ladies, seated on the ground on cushions, turned the heads of the Parisian dames. This elegant introduction made the exotic beverage a subject of conversation, and in 1672, an Armenian at Paris at the fair-time opened a coffee-house. But the custom still prevailed to sell beer and wine, and to smoke and mix with indifferent company, in their first imperfect coffee-houses. A Florentine, one Procope, celebrated in his day as the arbiter of taste in this department, instructed by the error of the Armenian, invented a superior establishment, and introduced ices: he embellished his apartment, and those who had avoided the offensive coffee-houses, repaired to Procope's; where literary men, artists, and wits, resorted, to inhale the fresh and fragrant steam. Le Grand says, that this establishment holds a distinguished place in the literary history of the

times. It was at the coffee-house of Du Laurent that Saurin, La Motte, Danchet, Boindin, Rousseau, &c., met; but the mild steams of the aromatic berry could not mollify the acerbity of so many rivals, and the witty malignity of Rousseau gave birth to those famous couplets on all the coffee-drinkers, which occasioned his misfortune and his banishment.

Such is the history of the first use of coffee and its houses at Paris. We, however, had the use before even the time of Thevenot; for an English Turkish merchant brought a Greek servant in 1652, who, knowing how to roast and make it, opened a house to sell it publicly. I have also discovered his hand-bill, in which he sets forth,—

"The vertue of the coffee-drink, first publiquely made and sold in England, by Pasqua Rosee, in St. Michael's Alley, Cornhill, at the sign of his own head."

For about twenty years after the introduction of coffee in this kingdom, we find a continued series of invectives against its adoption, both in medicinal and domestic views. The use of coffee, indeed, seems to have excited more notice, and to have had a greater influence on the manners of the people, than that of tea. It seems at first to have been more universally used, as it still is on the continent; and its use is connected with a resort for the idle and the curious: the history of coffee-houses is often that of the manners, the morals, and the politics, of a people. Even in its native country, the government discovered that extraordinary fact, and the use of the Arabian berry was more than once forbidden where it grows; for Ellis, in his "History of Coffee," 1774, refers to an Arabian MS. in the king of France's library, which shows that coffee-houses in Asia were sometimes suppressed. The same fate happened on its introduction into England.

Among a number of poetical satires against the use of coffee, I find a curious exhibition, according to the exaggerated notions of that day, in "A cup of coffee, or coffee in its colors," 1663. The writer, like others of his contemporaries, wonders at the odd taste which could make coffee a substitute for Canary;—

"For men and Christians to turn Turks, and think
To excuse the crime, because 'tis in their drink!
Pure English apes! ye may, for ought I know,
Would it but mode—learn to eat spiders too.*
Should any of your grandsires' ghosts appear
In your wax-candle circles, and but hear
The name of coffee so much called upon,
Then see it drank like scalding Phlegethon,
Would they not startle, think ye, all agreed
'Twas conjuration both in word and deed;
Or Cataline's conspirators, as they stood
Sealing their oaths in draughts of blackest blood?
The merriest ghost of all your sires would say,
Your wine's much worse since his last yesterday.
He'd wonder how the club had given a hop
O'er tavern-bars into a farrier's shop,
Where he'd suppose, both by the smoke and stench,
Each man a horse, and each horse at his drench.
Sure you're no poets, nor their friends, for now,
Should Jonson's strenuous spirit, or the rare
Beaumont and Fletcher's in your rounds appear,
They would not find the air perfumed with one
Castilian drop, nor dew of Helicon;
When they but men would speak as the gods do,
They drank pure nectar as the gods drink too,
Sublimed with rich Canary—say shall then
These less than coffee's self, these coffee-men,
These sons of nothing, that can hardly make
Their broth, for laughing how the jest does take;
Yet grin, and give ye for the vine's pure blood
A loathsome potion, and yet understood,
Syrup of soot, or essence of old shoes,
Dashed with durnals and the books of news."

Other complaints arose from the mixture of the company in the first coffee-houses. In "A broadside against Coffee, or the Marriage of the Turk," 1672, the writer indicates the growth of the fashion:—

"Confusion huddles all into one scene,
Like Noah's ark, the clean and the unclean;
For now, alas! the drench has credit got,
And he's no gentleman who drinks it not.
That such a dwarf should rise to such a stature!
But custom is but a remove from nature."

In "The Women's Petition against Coffee," 1664, they complained that "it made men as unfruitful as the deserts whence that unhappy berry is said to be brought: that the offspring of our mighty ancestors would dwindle into a succession of apes and pigmies: and on a domestic message, a husband would stop by the way to drink a couple of cups of coffee." It was now sold in convenient penny-worths; for in another poem in praise of a coffee-house, for the variety of information obtained there, it is called "a penny university!"

Amid these contests of popular prejudices, between the lovers of forsaken Canary, and the terrors of our females at the barrenness of an Arabian desert, which lasted for twenty years, at length the custom was universally established; nor were there wanting some reflecting minds desirous of introducing the use of this liquid among the laboring classes of society, to wean them from strong liquors. Howel, in noticing that curious philosophical traveller, Sir Henry Blount's "Organon Salutis," 1659, observed that "this coffa-drink hath caused a great sobriety among all nations; formerly apprentices, clerks, &c., used to take their morning draughts in ale, beer, or wine, which often made them unfit for business. Now they play the good-fellows in this wakeful and civil drink. The worthy gentleman Sir James Muddiford, who introduced the practice hereof first in London, deserves much respect of the whole nation." Here it appears, what is most probable, that the use of this berry was introduced by other Turkish merchants, beside Edwards and his servant Pasqua. But the custom of drinking coffee among the laboring classes does not appear to have lasted; and when it was recently even the cheapest beverage, the popular prejudices prevailed against it, and run in favor of tea. The contrary practice prevails on the continent, where beggars are viewed making their coffee in the street. I remember seeing the large body of shipwrights at Helvoetsluys summoned by a bell, to take their regular refreshment of coffee; and the fleets of Holland were not then built by arms less robust than the fleets of Britain.

* This witty poet was not without a degree of prescience; the luxury of eating spiders has never indeed become "modish," but Mons. Lalande, the French astronomer, and one or two humble imitators of the modern philosopher, have shown this triumph over vulgar prejudices, and were epicures of this stamp.

The frequenting of coffee-houses is a custom which has declined within our recollection, since institutions of a higher character, and society itself, has so much improved within late years. These were, however, the common assemblies of all classes of society. The mercantile man, the man of letters, and the man of fashion, had their appropriate coffee-houses. The Tatler dates from either to convey a character of his subject. In the reign of Charles II., 1675, a proclamation for some time shut them all up, having become the rendezvous of the politicians of that day. Roger North has given, in his Examen, a full account of this bold stroke; it was not done without some apparent respect to the British constitution, the court affecting not to act against law, for the judges were summoned to a consultation, when, it seems, the five who met did not agree in opinion. But a decision was contrived that "the retailing of coffee and tea might be an innocent trade; but as it was said to nourish sedition, spread lies, and scandalize great men, it might also be a common nuisance." A general discontent, in consequence, as North acknowledges, took place, and emboldened the merchants and retailers of coffee and tea to petition; and permission was soon granted to open the houses to a certain period, under a severe admonition, that the masters should prevent all scandalous papers, books, and libels, from being read in them; and hinder every person from spreading scandalous reports against the government. It must be confessed, all this must have frequently puzzled the coffee-house master to decide what was scandalous, what book was fit to be licensed to be read, and what political intelligence might be allowed to be communicated. The object of the government was, probably, to intimidate, rather than to persecute, at that moment.

Chocolate the Spaniards brought from Mexico, where it was denominated *choccolatti;* it was a coarse mixture of ground cocoa and Indian corn with rocou; but the Spaniards, liking its nourishment, improved it into a richer compound, with sugar, vanilla, and other aromatics. The immoderate use of chocolate, in the seventeenth century, was considered as so violent an inflamer of the passions, that Joan. Fran. Rauch published a treatise against it, and enforced the necessity of forbidding the *monks* to drink it; and adds, that if such an interdiction had existed, the scandal with which that holy order had been branded might have proved more groundless. This *Disputatio medico-diætetica de aere et esculentis, nec-non de potu*, Vienna, 1624, is a *rara avis* among collectors. This attack on the monks, as well as on chocolate, is said to be the cause of its scarcity; for we are told that they were so diligent in suppressing this treatise, that it is supposed not a dozen copies exist. We had chocolate-houses in London long after coffee-houses; they seemed to have associated something more elegant and refined in their new term when the other had become common. Roger North thus inveighs against them: "The use of coffee-houses seems much improved by a new invention, called chocolate-houses, for the benefit of rooks and cullies of quality, where gaming is added to all the rest, and the summons of W—— seldom fails; as if the devil had erected a new university, and those were the colleges of its professors, as well as his schools of discipline." Roger North, a high tory, and attorney-general to James II., observed, however, that these rendezvous were often not entirely composed of those "factious gentry he so much dreaded," for he says, "This way of passing time might have been stopped at first before people had possessed themselves of some convenience from them of meeting for short despatches, and passing evenings with small expenses." And old Aubrey, the small Boswell of his day, attributes his general acquaintance to "the modern advantage of coffee-houses in this great city, before which men knew not how to be acquainted but with their own relations, and societies:" a curious statement, which proves the moral connexion with society of all sedentary recreations which induce the herding spirit.

D'Israeli.

CAUSE OF SOUND IN THUNDER.

Thunder is one of the consequences resulting from lightning, and lightning appears to be occasioned by the combustion of some of the inflammable particles of the air; or, according to more recent opinions, of a condensation of aerial matter conducing to electricity, by which, in either case, a vacuum is created. The surrounding atoms which remain uninfluenced by this change, being forced together by the whole weight of the atmosphere, greatly constrict each other; but their elastic nature causes them immediately to expand, and by this enlargement their sonorous property is acquired. A centrifugal force being thus established, it acts in all directions alike; but as the circle extends, its propulsive power becomes gradually diminished, till at last its pressure is no longer felt, nor sound created. The rumbling noise of thunder is produced by that portion of the sonorous circle which strikes upon the earth, whence it becomes condensed; and, being intercepted in its upward course by dense masses of vapor, it is again reflected, and this alternate motion and reverberation continue, until the interruption ceases, or the original force is exhausted. Echo is occasioned also by reverberation from one cloud to another.

Webster's Principles of Sound.

RESPIRATION OF PLANTS.

M. Colon has lately read before the French Academy of Sciences a memoir on the respiration of plants, with experiments, proving that during the process water is decomposed, and that the carbonic acid formed is derived from the oxygen of the water, which unites with the carbon of the grain. It is proposed to examine, on a future occasion, whether the carbonic acid thus formed is totally or partially disengaged, and whether the hydrogen of the water is absorbed by the grain.

NATURAL HISTORY.

LONGEVITY OF BIRDS.

It is, as well remarked by Mr. Knapp, "difficult, from many circumstances, to form an accurate statement of the natural duration of animal life, the wild creatures being, in great measure, removed from observation, and those in a condition of domestication being seldom permitted to live as long as their bodily strength would allow. It was formerly supposed that the length of animal life was in proportion to the space it remained in the parent, from conception to birth, and the length of time it required to obtain maturity. This notion might have some support in reason and fact occasionally, but in many cases was incorrect; and, in regard to birds, had no foundation. Herbivorous animals probably live longer than carnivorous ones, vegetable food being most easily obtainable in all seasons, in a regular and requisite supply; whereas animals that subsist on flesh, or by the capture of prey, are necessitated at one period to pine without food, and at another gorged with superfluity: and, when the bodily powers of rapacious creatures become impaired, existence is difficult to support, and gradually ceases; but with herbivorous animals in the same condition, supply is not equally precarious or wholly denied. Yet it is probable that few animals, in a perfectly wild state, live to a natural extinction of life. In a state of domestication, the small number of carnivorous creatures about us are sheltered and fed with care, seldom are in want of proper food, and at times are permitted to await a gradual decay, continuing as long as nature permits, and by such attentions many have attained to a great age; but this is rather an artificial than a natural existence. Our herbiverous animals, being kept mostly for profit, are seldom allowed to remain beyond approaching age; and when its advances trench upon our emoluments by diminishing the supply of utility, we remove them. The uses of the horse, though time may reduce them, are often protracted; and our gratitude for past services or interest in what remains, prompts us to support his life, by prepared food, for easy digestion, or requiring little mastication; and he certainly by such means attains to a longevity probably beyond the contingencies of nature. I have still a favorite pony —for she has been a faithful and able performer of all the duties required of her in my service for upward of two-and-twenty years—and, though now above five-and-twenty years of age, retains all her powers perfectly, without any diminution or symptom of decrepitude; the fineness of limb, brilliancy of eye, and ardor of spirit, are those of the colt; and, though treated with no remarkable care, she has never been disabled by the illness of a day, or sickened by the drench of the farrier. With birds it is probably the same as with other creatures; and the eagle, raven, parrot, &c., in a domestic state attain great longevity; and though we suppose them naturally tenacious of life, yet, in a really wild state, they would expire before the period which they attain when under our attention and care. And this is much the case with man, who probably outlives most other creatures; for though excess may often shorten, and disease or misfortune terminate his days, yet naturally he is a long-lived animal. His 'threescore years and ten' are often prolonged by constitutional strength, and by the cares, the loves, the charities of human nature. As the decay of his powers awaken solicitude, duty and affection increase their attentions, and the spark of life only expires when the material is exhausted."

The birds most celebrated for longevity are the raven, the pelican, and the eagle, though the evidence which we have met with, in proof of the common opinion respecting the long life of these birds, is not always so satisfactory as we could wish. To these may be added the skylark, which has been known to live in a cage, as Olina says, ten years; while Raczynski mentions an instance in which one lived twenty-four years.

In his chapter on "The Longest Lives," Pliny says, "Hesiod (the first writer, as I take it, who hath treated of this argument, and yet like a poet), in his fabulous discourse touching the age of man, said, forsooth, that a crow lives nine times as long as we; and harts or stags four times as long as he, but ravens thrice as long as they." If we estimate accordingly a generation at thirty years, the age of the crow would be 270 years, that of the stag 1080 years, and that of the raven 3240 years; but if we interpret the terms used by both Hesiod and Pliny to signify a year, we should then have the life of the crow nine years and of the raven 108, which is probably nearer the truth.

"No person, as far as I know," says Montbeillard, "has determined the age at which the young ravens have acquired their full growth and are capable of propagating. If in birds, as in quadrupeds, each period of life was proportional to the total space of existence, we might suppose that the crows required many years to reach their adult state, though it seems well ascertained that this bird sometimes lives a century or more. In many cities of France they have been known to attain to that distant period; and in all countries and all ages they have been reckoned as birds extremely long-lived. But the progress to maturity must be slow in this species, compared to the duration of their life; for toward the end of the first summer, when all the family consort together, it is difficult to distinguish the old from the young, and very probably they are capable of breeding the second year."

Pigeons are reported to have lived from twenty to twenty-two years; and even linnets, goldfinches, and other small birds, have been known to live from fifteen to twenty-three years.

Willoughby says, "We have been assured by a friend of ours, a person of very good credit, that his father kept a goose, known to be fourscore years of age, and as yet sound and lusty, and like enough to have lived many years longer, had he had not been forced to kill her for mischievousness, worrying and destroying the young geese and goslins." In another part of

his valuable work, this writer tells us, that "he has been assured by credible persons, that a goose will live a hundred years and more."

It has been supposed that the pelican derives its great longevity from the peculiar texture of its bones, which are thin, almost transparent, and exceedingly light. Even in captivity it has been observed to be more tenacious of life than most other birds. "Of a great number of pelicans kept in the menagerie at Versailles, none died in the space of twelve years; yet during that time some of almost every other species of animals died."

It was reported, as Aldrovand has stated, by persons worthy of credit, that a pelican, eighty years of age (*octogenariam*), was kept by the emperor Maximilian, and was held as a sort of auspicator in his camp. It was supposed to have been hatched in the time of Philip the emperor's father. It was afterward kept for a long time at the court of the emperess, after it was no longer able, through old age, to use its wings, the expense of keeping it being four crowns a day. Turner mentions one which lived fifty years; and Raczynski another, kept at the court of Bavaria for forty years.

"Eagles," says Pennant, "are remarkable for their longevity, and for their power of sustaining a long abstinence from food. A golden eagle, which has now been nine years in the possession of Owen Holland, Esq., of Conway, lived thirty-one years with the gentleman who made him a present of it; but what its age was when the latter received it from Ireland is unknown. The same bird also furnishes a proof of the truth of the other remark, having once, through the neglect of servants, endured hunger for twenty-one days, without any sustenance whatsoever."

The great age of the eagle is beautifully alluded to in the Psalms, where it is said of the righteous man that "his youth is renewed like the eagle's," a passage which greatly exercised the ingenuity of the ancient fathers and other commentators in fancying the manner in which the eagle did renew its youth. The greater number of them, and among these, St. Jerome, St. Ambrose, St. Gregory, Nicephorus, and Rabbi David, say that when the bird begins to feel advancing age from the weight of its feathers and the dimness of its eyes, it betakes itself to a fountain of water, and, plunging therein, has its whole frame renovated. St. Damian adds, that, before immersion, it so places itself in the focus of the sun's rays (*ad circulum solis*) as to set its wings on fire, and in this way to consume the old feathers; proving pretty plainly that St. Damian was not aware of the natural mode of birds renewing their feathers by moulting. Rabbi David adds, that when it delays the operation too long it has not strength to rise from the water, and is frequently drowned.

St. Augustine says, that when the eagle becomes very old, the upper mandible of the beak grows so long that the bird can no longer feed, in which case it betakes itself to a rock or rough stone, and rubs its beak till the overgrown part is ground down into proper proportion.

Albertus Magnus gives a still more ingenious process of renewal, not, however, of his own invention, but quoted from Jorachus and Andelinus, whose works, we presume, are now lost. "They say," reports Albertus, "that an old eagle at the period the young ones are fledged, as soon as she has discovered a clear and copious spring, flies directly upward, even to the third region of the air, which we term the region of meteors, and when she feels warm, so as to be almost burning, suddenly dashing down and keeping her wings drawn back, she plunges into the cold water, which, by the astringing of the external cold, increases the internal heat. She then rises from the water, flies to her nest, and nestling under the wings of her warm young ones, melts into perspiration, and thence with her old feathers she puts off her old age, and is clothed afresh; but while she undergoes this renovation, she makes prey of her young for food. But I can only," he adds, "consider this as a miraculous occurrence, since in two eagles which I kept I observed no changes of this sort; for they were tame and docile, and moulted in the same manner as other birds of prey."

It is very obvious that all these are mere fancies, and farther, that there are few or no data by which to determine the age of wild birds. We have, indeed, observed among house-sparrows individual cockbirds, in which the black markings were intermixed with white feathers: but whether this was the hoariness of age, or merely an accidental variety of color, we had no means of ascertaining. It has been long decided that the grayheaded crow is not an old carrion crow grown hoary with age as is popularly believed; but a different species. Natural History of Birds.

ON THE STINGING PROPERTIES OF THE LESSER WEEVER FISH.

BY GEORGE JAMES ALLMAN, ESQ.

None of the older naturalists, indeed, ever think of denying venomous properties to the weever; it is the dorsal spines, however, which are almost constantly spoken of as the seat of the virus. Willughby says the six dorsal spines are considered venomous, and therefore the fishermen cut them off on taking a fish. He does not, however, think it proved that the poison is confined to these spines.

Universal as was the belief among the ancients of the venomous character of the weever, the idea seems to be now almost as universally abandoned, and modern naturalists agree almost to a man in considering it a vulgar error, fit only to be placed among the rubbish which recent investigations have been so rapidly clearing away from the science of nature. Cuvier treats it altogether as an error, and even denies the possibility of the weever inflicting poisoned wounds. Speaking of its spine, he says, "N'ayant aucun canal, ni communiquant avec aucune glande, elles ne peuvent verser dans les plaies un venin proprement dit."

Powerful as is this authority, and that of many other of the moderns, I have been, notwithstanding, induced to come to quite a different conclu-

sion, and to agree with the ancients in ascribing venomous properties to the weever.

On the 9th of August, 1839, I was wounded near the top of the thumb by a *trachinus vipera*, which had just been taken in a seine with herrings, sand-eels, &c. The wound was inflicted by the spine attached to the gill-covers, during my attempt to seize the fish. A peculiar stinging pain occurred a few seconds after the wound, and this gradually increased during a period of about fifteen minutes. The pain had now become most intolerable, extending along the back of the thumb toward the wrist; it was of a burning character, resembling the pain produced by the sting of a wasp, but much more intense. The thumb now began to swell, and exhibited an inflammatory blush, extending upward to the wrist. The pain was now distinctly throbbing, and very excruciating. In this state it continued about an hour, when the pain began somewhat to subside, the swelling and redness still continuing. In about an hour and a half the pain was nearly gone. Next morning the swelling of the thumb had but slightly diminished, and was in some degree diffused over the back of the hand; the thumb continued red and hot, and painful on pressure over the metacarpal bone. In a few days the swelling had completely subsided, but the pain on pressure continued for more than a week. No treatment was adopted.

It is here to be remarked that the wound, of which the above phenomena were the result, was inflicted by the spine of the gill-cover, and not by those belonging to the dorsal fin. Whether, indeed, these latter spines possess any poisonous properties, I have not as yet been able decidedly to determine; though their threatening aspect, when erected, and black membrane, present an appearance so formidable, as at once to lead an inexperienced observer to refer to them any stinging power which the little animal may be supposed to possess.

Though I have had no opportunity of making farther personal observations on the effects of wounds inflicted by the weever, facts which fully bear out the conclusions to which my own experience had enabled me to come, have been related to me by witnesses, in whom I can place all possible reliance. A friend informed me that last autumn he saw a woman stung in the hand by one of these fishes; the poor woman immediately uttered loud cries, and seemed to suffer great agony, while in an incredibly short time after the wound the hand had become enormously swollen, and exhibited considerable inflammatory redness. No observations were made on the progress of the case.

The spines of the opercula will be found on examination to be deeply grooved along the edges, each groove terminating at the base of the spine in a conical cavity, excavated in the posterior edge of the bony part of the operculum. In the sides of these excavations the edges of the grooves lose themselves, so that there is a perfect continuity between each groove and the corresponding cavity.

From the posterior edge of the operculum the integument is continued over the spine to within a very short distance of the point; by which means the spine is enclosed in a complete sheath for nearly its entire length, and the groove at each side is converted into a perfect tube, extending from the conical cavity at the base, almost to the point of the spine.

The result of this arrangement is a structure beautifully adapted for the conveyance of a fluid from the base to the apex of the spine.

The spines of the dorsal fin are also grooved, but the grooves disappear toward the base, after becoming superficial, and do not terminate in cavities similar to those at the bases of the spines of the opercula.

I have not as yet been able to detect any specific gland connected with this apparatus. There is, indeed, in the bottom of each of the conical cavities above mentioned, a small pulpy mass, which may possibly be of a glandular nature; but in ascribing to it the property of secreting the virus, I do nothing more than hazard a distant conjecture. It seems, indeed, to be chiefly composed of fatty matter; and on puncturing my hand with a lancet, and introducing a little of this substance taken from a fish which had been about 24 hours dead, no phenomena of any interest were the result, there being merely a slight smarting produced, such as might be expected from the introduction of any such extraneous matter into a recent wound, and very different indeed from the intense pain produced by the sting of the living fish. The property of secreting the virus may probably with more truth be ascribed to the pulpy sheath of the spine; but this, too, is nothing more than conjecture.

Annals and Magazine of Natural History.

A wise man's heart is like a broad hearth that keeps the coals (his passions) from burning the house; and good deeds in this life are coals raked up in embers, to make a fire next day.

When all is done, human life is, at the best, like a froward child, that must be played with and humored a little to keep it quiet till it falls asleep, and then the care is over.

Wickedness may well be compared to a bottomless pit, into which it is easier to keep ourself from falling than, having fallen into, to stay oneself from falling infinitely.

If there be an object truly ridiculous in nature it is an American patriot, signing resolutions of independence with one hand, and with the other brandishing a whip over his affrighted slaves.

Virtue knows no distinction of sex.

It is a common fault never to be satisfied with our fortune, nor dissatisfied with our understanding.

A good conscience is the finest opiate.

A war is to states what exercise is to individuals: a proper proportion may contribute to health and vigor, but too much emaciates and wears out a constitution.

ARTS AND ARTISTS.

SCULPTURE.

During the middle ages—the period commonly called the dark ages of the world, extending from the fifth or sixth, to the twelfth century of our era, art, science, religion, and literature, were all neglected, and in many parts of Europe were completely buried in a rayless night of ignorance. The only power that kept alive the spark of learning and fostered the weak and degenerate child of Grecian art, was the spirit of Christianity; and to its influence is the world indebted for that effulgent day of knowledge which now beams upon mankind in meridian splendor. Under its guidance, architecture progressed in beauty, and erected temples and shrines dedicated to the worship of the true God. That religious spirit that was the principal creative power of Grecian sculpture, fostered the art to some extent during the middle ages, and sculptures, having a devout meaning, adorned the sacred edifices. These, and these only, are the faint lines of intellectual light which beautify the sombre page of that period. As a specimen of the style of sculpture on the continent about the middle of the eighth century, and not long preceding the time of Charlemagne, we give the subjoined cut. It represents the capital of a column, erected in France about the year 760, in commemoration of some remarkable act of interposition of one of the saints in defending a monastery from the attack of a band of Norman brigands. It will be observed that a halo surrounds the head of each of the human figures (who are portrayed in a sitting posture, and reading), which appendage was always attached to representations of any of the evangelists. This sculpture undoubtedly is intended to represent two of the four writers of the gospels, or of the primitive Christian apostles. With the exception of this and the comparatively rude sculptures which adorned the Christian churches, we find but little of interest connected with the art, till its permanent revival in Italy by Michael Angiolo Buonarotti toward the close of the fifteenth century.

Sculpture in the eighth Century.

Among the earliest professors who strove to rescue sculpture from total oblivion, and co-operated powerfully in giving the fine arts an impulse, was Donato de Bardi, who was born at Florence in 1380. Nicholas Pisi, who received the appellation of "Restorer of the fine taste in sculpture," Agostino Saneze, Andre Ugolino, and two or three others, preceded Donato, but their attempts were feeble. The principal sculptures of this artist were executed in bronze. One of these statues—a St. Mark—is said to have been so admirably executed, that, on first seeing it, Michael Angiolo addressed it in these emphatic words: "*Marco, parche non mi parli?*" "Mark, why do you not speak to me?" Many other sculptors of less note succeeded Donato, but none appeared worthy to wear the mantle of Praxiteles, until that remarkable man, Michael Angiolo, entered the arena of art. This great and universal genius not only succeeded in almost equalling the grand and beautiful of the Grecian models, but he stands unrivalled among modern artists. Although he practised painting and architecture with eminent success, yet he considered sculpture as his profession, and at the close of a long life (ninety years) he expressed a regret at not having made sculpture his sole study and pursuit. In many instances he renounced the imitations of the antique, and struck out a new path and style, originating in his own imagination. Like his paintings, his statues have a grandeur of expression, yet every part is subservient to the strictest rules of natural symmetrical proportions. Although many of his works want that purity of style awarded to the age of Praxiteles and Lysippus, yet he never degenerates into coarseness or insipidity.

The names of Torrigiano, Baccio, Bandinelli, Bernini, and Donabelli, appear the most conspicuous as sculptors contemporary with, or immediately succeeding, Angiolo. But from that period, till the time of Canova, the art flourished with small success upon the continent. This artist gave birth to a new era in Italian art, and revived and displayed that taste for the beautiful simplicity of the antique, for which some of his successors have become so celebrated. Canova was a Venetian by birth, but his principal theatre of action was at Rome and Florence. From his earliest childhood he had been accustomed to view the relics of ancient art with a familiar eye, and study the works of Angiolo and others almost daily. When he took up the chisel he determined to imitate Lysippus, by commencing the art, where the art itself began—in the study of nature. But the productions of his earlier career are criticised as exhibiting an affectation—an opera, stage taint, which substracts greatly from their real worth, as transcripts of the beautiful and true in nature. He is accused of having given a forced action to all his figures, and in the ardor of youth, infusing into his statues too much of the fire and animation of his own soul. In his desire to represent the passions in their liveliest forms, he seemed to forget that simplicity, with its subduing influence, was the prominent characteristic of nature. It has been said that in his kneeling Magdalen, a subject where tranquil grace and the quietude of repose

should be portrayed, "there is enough of affectation to poison the loveliest, the most exquisite workmanship, and the most finished charms of shape."

But in after years, when experience had sobered his thought and corrected his judgment, and observation taught him the true charms by which nature captivated the beholder, these faults of Canova's earlier productions were scarcely apparent, and he became completely weaned from the mannerisms of his youth.

One of the finest of the sculptures of Canova, of a religious character, is a group upon a monument erected to the memory of the Archdutchess Christine, of Austria. In this splendid group are nine figures, all of the natural size, which are made emblematical of the triumph of Virtue. Another fine group, representing Hercules destroying his children with arrows, and generally called the "infuriate," attests the great genius of Canova. His statue of Religion, represented in the cut below, may also rank among the best of his later works. The fitness of sculpture, or indeed of any art, in illustrating this highest and holiest feeling of our nature, has been questioned; but we cannot see why the sculptor or the painter may not with propriety be allowed to imbody the creations of his fancy in marble or on the canvass, and portray in the

Statue of Religion.

character of a goddess, or a thing for reverence, that which, more than all other causes combined, has in all ages fostered their respective callings.

This splendid statue is about twenty-five feet in height. On the head of the figure is a tiara, bearing in front a triangle or symbol of the trinity. One hand points to Heaven, while the other rests upon a medallion, on which is sculptured the head of the apostle Peter. Her left arm supports a cross, and upon the columnar pedestal of the medallion, are the tables of the Mosaic law, and the precepts of the Gospel. This statue was intended for a temple he proposed to erect near his birth-place, but death frustrated his design.

HOUSE OF REFUGE.

From the sixteenth annual report of the managers of the House of Refuge in the city of New York, we glean the following brief history of its origin. The remarks upon the result of the benevolent efforts of the founders of this institution, and the salutary influence of the modern penitentiary system, are valuable.

In the general progress of human society from remote ages, through successive stages of improvement, from barbarism to civilization, and from civilization to refinement, no change, affecting civil institutions, has been more remarkable or attended with more important results, than the increased wisdom and benevolence of criminal legislation. As the character and ends of government are so ultimately connected with the recognition and security of individual and social rights, and, of consequence, with the happiness and prosperity of society, it was to have been expected that the highest hopes of improvement and order would be fixed on the perfection of civil constitutions and legal enactments. Hence for the formation of well-adjusted codes of law, on the one hand guarantying to the individual the enjoyment of the greatest amount of personal independence, and on the other enforcing obedience to the necessary requisitions of the public will, have the efforts of the most sagacious and powerful minds long been directed.

But aside from those more general features which characterize and distinguish the various names and forms of government, great attention has been been paid to the philosophy of penal legislation as a separate and important department. The very existence of government presupposes the wisdom and necessity of penal sanctions. For if society were free from the encroachments of passion, violence, and corruption, there would nowhere exist any call for the concentration of executive power. But the invariable exercise of this power whether by kings or people, by tyrants and despots or just and impartial tribunals, evinces the necessity of law; and law to be respected must be supported by penalties. Hence sages and jurists, and men of every order of intellect, have studied, debated, and written, for years, to devise and frame for government the best system of legal penalties. And the consequence is, that the character and ends of criminal legislation have been vastly changed, not merely in point of philosophical acumen, but in their features of benevolence and humanity.

In the best systems of the most enlightened nations of antiquity, we can discover nothing of regard for the great principles of justice and humanity, any farther than these were deemed essential, in particular instances to the prosperity and glory of the state. Every ,question of right was determined rather from a selfish view of its relations to personal and public convenience, than from any regard to equity in the abstract. And the most renowned lawgivers openly avowed the doctrine, that measures, which in private life would be the height of perfidy and injustice, became righteous as soon as adopted by public bodies. This principle ran through all their political creeds, and expediency and self-interest were preferred before the claims of humanity and right. Even in the rigid and exacting code of the Spartan lawgiver, a code renowned among all contemporary nations for wisdom and lofty virtue, there is nowhere any provision made to reclaim the vicious, or secure the morals of the young. Morality was never inculcated for its own sake, as of intrinsic obligation, and the best foundation of social order. No matter how much the doctrines of the sages clashed with the rule of right, if they only raised up a generation, bold, intrepid, subtle and hardy, and trained for deeds of arms on the battle field. The Lacedemonian virtue encouraged theft, and punished the perpetrator only when his address failed to conceal the act, and for that very reason. There was no conscience in such systems which could be touched with a conviction of moral obligation. Law in its best offices was but the irresponsible agent of guarding arbitrary institutions. Its requisitions were like so many outposts around the territory of the state, erecting a barrier against the incursions of enemies from without, but leaving the soil within uncultivated and unenriched. The legislator was content if he could prevent the inroads of luxury and foreign effeminacy, although the iron discipline, which secured this end, crushed in the hearts of the youth every humane and generous impulse. The one grand idea of national character, which best comported with the spirit of the age, was to be wrought out and sustained by the spirit of the laws, whatever other interests were sacrificed. The tone thus given to public morals, and the remote influences sure to rest, in consequence, upon succeeding generations, were incidental results totally disregarded.

But the relations of law to the state are now determined by very different principles. Law has become the expression of popular conviction intent on the common good. It regards, to some extent at least, the probable result of legislative schemes upon the purity, order, and good morals of society. The retributions of legal justice are no longer dictated by a spirit of revenge, but regarded as needful inflictions to secure the moral reformation of the criminal. Tribunals are no longer instituted to give a semblance of equity to the impulses of vindictive passions, but, with a leaning to mercy, to conduct a process of judicial investigation. Law has a heart as well as a head. It regards the natural distinctions of crime, the age and habits of the offender, the palliation of circumstances, and the force of temptation, and weighs them all in the scales of even-handed justice. It carries the sceptre of mercy, as well as the sword of the executioner. Thus has the theory of penal legislation, in its objects, limits, and sanctions, undergone an important change. The end of punishment is not now the measuring out of retribution, "an eye for an eye, and a tooth for a tooth," the infliction of physical suffering as an *equivalent* for the injury done to society in the outrage of law, but to prevent the aggressor from a repetition of his offences and to deter others from crime. With the first great principle of penal law, the protection of society, it has associated this sublime and benevolent object, the restoration of the transgressor to his integrity. And this latter end, once gained, becomes in return the grand security of the former.

The divisions of the statute book have become more numerous and specific, and legal penalties, graduated by this important consideration, the wise adaptation of punishment to crime. Among those who are brought to the bar of public justice, there is every variety and shade of guilt. With some, it is the first transgression, the result not so much of a spirit of disobedience to the laws, as of sudden and powerful temptation. With others the deliberate acts of hardened offenders. To inflict the same kind and degree of punishment on both these classes, would be to blindfold the eyes of justice. But by the institution of equitable tribunals and impartial trials, the sentence is made to distinguish between the old transgressor, and the youth who has but just stepped aside to crime, and has not yet lost sight of the path of virtue, between the actual transgression, and the intention, the "*quo animo*" of the transgressor. Thus in well-regulated family government, the will of the parent is law, and the disobedience of the child is measured, not by the inconvenience and loss which it occasions in the household, nor even by the importance of the law which has been broken, but by the temper and spirit of the child. Noble and violent impulses are often found united in the same nature, and the outbreak of a hasty passion is often widely contrasted with an act of cool and deliberate malice, and the sentence passed upon the offender is graduated accordingly. Such features, in the general progress of social institutions, evince clearly the increased wisdom and benevolence of criminal legislation.

The object to be accomplished was the amelioration of the condition of a class of the community, thrown, by their own voluntary acts, without the pale of common sympathy, and beyond the reach of social influences. In the prosecution of this humane enterprise, the defects of the old existing system of penal administration were early discovered.

The prisons in many instances were found to be but ill adapted to the purposes for which they were designed. They did indeed deprive the inmate of personal liberty, and secure his confinement, but beyond this their influence was almost wholly bad. The want of sufficient ventilation caused an atmosphere within the walls, not merely

unfriendly to physical health, but positively corrupting and degrading in its influence. The internal arrangements were such as to deprive the wretched inmate of that degree of exercise which is necessary to the support of the physical powers. The daily food of the establishments, not only coarse and cheap, but often from its noxious qualities produced the effects of a poison. And, as a necessary result of the combined operation of these causes, a frequent and obstinate mortality prevailed, carrying off hundreds by a legal murder to an untimely death.

Another evil which called loudly for a remedy, was the want of classification among the prisoners. They were thrown into indiscriminate association, the old and the young, those of both sexes and all grades of guilt, the just initiated with the confirmed convict. It was a school of crime. The old corrupted the young, the novice was eager to take lessons from the cunning and craft of the more accomplished, and those who were peers in guilt threw together the results of their experience, and from the common stock drew materials for the invention and future perpetration of more consummate villany. And all went forth when the term of their sentence was expired, not converted into honest and upright citizens, but more desperate and determined in their enmity to the community which had demanded their sentence, and to the laws which had chastised them. Even if any honorable feelings or purposes survived such a dreadful ordeal, there was no hand of kindness and sympathy ready to sustain and encourage the penitent in his new resolves. Who could place confidence in the graduates of such a system of moral training? Thus youth was ensnared, the beginner made worse, and the thoroughly vicious confirmed, and bound, as with chains of iron, to his life of crime. To remove these evils, and satisfy the demands of an increasing and more enlightened benevolence, this country gave birth to the penitentiary system. In the city of New York, the attention of the humane and philanthrophic was early directed to this important improvement in prison discipline. But this system from which so much was anticipated at the outset, and which proved in reality so valuable, was found at length inadequate, under the management which sustained its operations, to provide a remedy for all the evils deplored. It was felt that the state of society, and the statistics of crime, in this city, demanded some more efficient institution to meet the exigencies of the case. It was at this time, and impelled by these facts, that this association took the field, with the hope of securing those objects for which other efforts had so signally failed.

It was observed, that among the criminals confined in our prisons, a large proportion were youth of both sexes, sentenced not so much for aggravated acts of guilt, as for the general charge of vagrancy, a crime which was felt to be the legitimate offspring of their early neglect and the want of restraining influences timely exerted. The out-streets and by-streets of the city were found filled with a crowd of idle and vicious children, learning and practising every abomination which the excesses of older transgressors could suggest. Some system of moral influences and salutary restraints, which should reach and destroy these corrupt associations, was earnestly desired. The reputation and honor of the city were felt to be intimately connected with the prevalence of a better state of morals among the young. The condition and character of society were suffering from a disease that preyed upon its very vitals. The corruption and debauchery of the youth were justly regarded as fatal to the purity, good order, and prosperity of the community. The probable course and end of children thus circumstanced were easy to be traced. A few years more of progress in a kind of education, which found so many auxiliary influences, and then some more daring or less cautious act of transgression would finish their preparatory studies, and fit them to enter the prison, the grand school or college of crime. And from this they were almost sure to emerge hopelessly beyond the reach of virtue. The conviction was felt, that if this class of offenders could be redeemed from the evil influences within the walls of the common prison, and subjected to some wiser and more humane system of personal restraint and discipline, many might be saved from ruin. When the causes of their early delinquency were considered, the absence of all good instruction, and the influence of the worst examples, the heart of compassion was deeply concerned in the condition, and believed in the possibility of their restoration to an honest course of life. Within them, never touched by any voice or office of kindness, might lie susceptibilities which sympathy and pity should awaken and nourish into the elements of a virtuous character, feelings crushed almost in infancy, which should spring up, if once the pressure were removed, into new and bright impulses; gratitude, love, and an honorable ambition.

Such, to some extent, are the causes and considerations which recommended the Society for the Reformation of Juvenile Delinquents to the favorable notice of the legislature and the public. And this system, once matured and developed in actual operation, is seen to be so full of good influences and important results, that the most skeptical have been convinced of its wisdom and usefulness.

The grand object of the school of reform is, as its name implies, the reformation of the juvenile offender. The means employed to accomplish this end are simple and obvious, and, on the testimony of sixteen years' experience, found to be in the majority of cases efficient and successful. The first step is of course to remove the youthful criminal from those circles of corrupt association in which his first lessons in crime have been learned. No moral influence, brought to bear upon him in the midst of such an atmosphere, would be of any avail. But once break up this fellowship of vice, and seclude its members from the haunts of their former indulgence, and there is hope of their recovery. Accordingly, some means of physical restraint are necessary, and the establishment of an asylum for that purpose

supplies this first desideratum. This affords the managers the opportunity of classifying those who are placed in their hands by the public authorities. The necessity and importance of this measure, as preliminary to all efforts to effect a thorough reformation, have been often demonstrated and sufficiently remarked upon in the foregoing pages. The obvious principle of classification is to distinguish the treatment of culprits by their different grades of guilt, just as a physician graduates his remedies in sickness, by the constitution of the patient and the nature and violence of the disease.

Another important feature in the reformatory system, is the steady employment of the youth of both sexes in some department of active labor. This is secured in the House of Refuge, by the prosecution of various trades and manufactures. Idleness is ever the parent of mischief, but when the hands are employed in some calling of honest industry, good resolutions and virtuous purposes are almost sure to be inspired. The success, which has distinguished this feature of the operations of the House of Refuge, sufficiently evinces the wisdom and importance of the arrangement. Brighter prospects are opened before the mind of the unfortunate criminal. Unfortunate he certainly is, for his departure from rectitude has been in many instances almost the unavoidable result of circumstances. But in the pursuit of some reputable trade, he perceives before him the means of obtaining a livelihood without a resort to dishonest practices. The path to virtue is opened to his footsteps, and inducements, to enter and continue in it, are multiplied around him. It is under such influences, that he perceives by contrast the folly and guilt of vicious courses, and makes in his breast the earnest resolve which lays the foundation of a virtuous character.

TERRESTRIAL MAGNETISM.

Philosophers are as ignorant of the nature of the magnetic as they are of the electric agent; and they are as imperfectly acquainted with their influence upon and relations to each other. So far as observation has extended, there is no lack of evidence calculated to impress the inquirer with a belief that these causes are intimately connected, if they be not in fact identical. But, before we make any reference to the nature of the agency, it will be necessary to describe some of those effects by which its presence may always be determined.

The fundamental principle of magnetism, or the science which explains the phenomena resulting from an occult agent so named, is that iron and ferruginous bodies in general, in a particular state, have a directive power, one end pointing to a spot near the north pole of the earth, and the other to a corresponding point in the south. There seems, in fact, to be a peculiar affinity between the poles of the earth, or points near them, and the ends or poles of magnets. This attractive power is not confined, as might be supposed, to one pole, but is equally active in both; and, could we entirely neutralize the effect of one, the other would be found sufficient to keep the magnet in its customary direction.

That we may clearly explain the nature of this attractive force, it will be necessary to refer to a few facts that especially relate to artificial magnets.

The magnetic power was first observed in a certain ore of iron. This magnetic ore appears to have been known from a very early age; but by what means it became known, or to whom the discovery is due, can only be a matter of conjecture; and fable in this instance, as well as others, supplies the place of truth. The Chinese lay claim to the merit of the discovery, and the Greeks induce us to favor their pretensions, by pleasing the fancy with a beautiful fable. The loadstone, they say, was discovered by Magnes, a shepherd of Mount Ida, who found a piece attached to the iron of his crook, and from this circumstance, it is said, the ore derived its name. The Hindoos are not without pretensions to the honor, and support their right with reasons as feasible as those adduced by other nations. The influence of magnets upon ferruginous bodies was probably known long before its directive power was discovered, which is to us its most important property. It is generally supposed that John de Giova, a Neapolitan, ought to have the honor of the discovery; but Dr. Gilbert and others say that the compass was brought into Italy from China, by Paulus Venetus, in the year 1260.

It is not at all singular that there should be so much difference of opinion upon a subject concerning which no authenticated evidence can be adduced. The magnetic principle of direction may have been discovered in Asia, Africa, or Europe, and various nations lay claim to the honor, each one finding defenders. Europeans have been as anxious to establish a right to the discovery as other nations, and their anxiety has been probably increased by the knowledge that they have long possessed a monopoly of intellectual energy and its consequent. It has been justly remarked by a celebrated writer on magnetism, that if the discovery can be attributed to Europeans, the Norwegians have the best claim to it, not only from the character of their early enterprises, but also from the probability of their meeting with the ore among the rocks of their native country. This supposition is strengthened by the fact that they were acquainted with the art of navigation long before any other European nation, or were at least more practised seamen; and from the daring they evinced it may be supposed, without misapplying facts, that they were acquainted with the directive power of the magnet. It is, however, a matter of little importance, whether the discovery was made in Europe, Asia, or Africa; for, although we should honor the memory of the discoverer, did we but know his name, and perhaps speak of him as "the immortal," he would be nothing the better for our admiration, and we should derive no practical advantage.

The magnetic iron ore, or loadstone, consists of the protoxyde and peroxyde of iron, with a small proportion of silica and alumina. In the iron mines of Sweden and Norway it is very abundant, and is found in Arabia, China, and other Asiatic countries. The appearance of the ore varies according to its composition. When two or more substances are chymically united together, the properties and appearances by which they are individually known are generally lost, and the combination has characters peculiarly its own. It may therefore be anticipated that the appearance of the magnetic iron ore is regulated by the proportional quantities of the several mineral substances which compose it, though a practised mineralogist may generally detect it by its dark gray color and peculiar lustre. All iron ores are under the control of the magnetic principle; but while some only obey its influence, others are the local habitation of the principle itself. All ferruginous substances are attracted by the magnetic agent, but the magnetic iron ore possesses in itself the attractive power. If we had only two ores of iron, one magnetic, the other not, it would be impossible to determine which possessed the magnetic principle; as soon as they were brought within the sphere of attraction, they would be drawn toward each other; but there would be no means of determining which was the attractive and which the attracted. But, supply us with a second magnet, or fragment of iron, and this is easily determined. If we take the piece of iron and bring it near to the magnet, it is immediately attracted; but if it be brought into contact with the unmagnetized iron, no such force will be in activity. If, instead of the piece of iron, we are furnished with a magnet, an entirely different course of phenomena will be presented. The unmagnetized ore will be attracted by it under all circumstances, in whatever manner it be presented; but the magnetized ore will be sometimes attracted and sometimes repelled, and by this change of effect the magnetic principle is detected.

It has been proved, by many careful experiments, that all metallic bodies, and probably many others, may be invested with magnetic agency, but iron receives it more readily than any other substance. It is said that a metal which contains only 130,000th part of its weight of iron, a proportion which cannot be detected by chymical means, may be magnetized. But the agent has an elective power, and is more powerfully condensed, if we may employ the expression, in that particular ore called loadstone; why it chooses this combination of substances in preference to any other, the philosopher has no means of determining, and cannot at present pretend to guess.

The mere existence of a magnetic iron ore would be of little importance, if there were no means by which the power could be transmitted into or induced upon other bodies. The process that would be required to reduce the magnetic iron ore into a shape suited for the purposes to which magnets are applied, would have a tendency to destroy the power itself; for both heat and hammering destroy magnetism. But the natural magnet or loadstone can communicate its peculiar properties to iron and other ferruginous substances. If a small piece of steel, as a sewing-needle, remain for a little time in contact with a loadstone, it will become a magnet; and if freely suspended upon its centre of gravity, will direct itself north and south, in the same manner as the substance from which it derives its power. Bars of steel may also be made magnetic by rubbing them with a loadstone or artificial magnet. This singular inductive power, possessed by the magnetic principle, gives great facilities of investigation, as the agent may be called into activity in any ferruginous body. We might speculate as to the nature of this process, but there is an uncertainty connected with it which cannot be very easily removed. It is possible that the agent, whatever it may be, exists in all ferruginous bodies, and that the directive power results from its accumulation; or it may be that it is actually communicated by one substance to another; a supposition, however, not very probable, as by one magnet hundreds may be made, and the original magnet will be stronger after the process than before, a circumstance which cannot be reconciled with the theory of communication.

But there is another result peculiarly characteristic of magnets, or rather of the agent itself, and that is the attractive and repulsive power of magnetic poles between themselves. That end of a magnet which points to the northern hemisphere is called the north pole of the magnet, and that which is directed to the southern the south. But, if we take two magnets, and bring their north poles together, a strong repellant power is called into action, and they fly from each other, and the needles can never come to rest till the south pole of one is directed to the north pole of the other. This is not merely the result of a strong repulsion between poles of the same name, whether north or south, but is partly produced by an attraction between poles of different names, for the north and south poles evince an evident tendency to come as nearly as possible to each other. Acknowledging the force of this law of the magnetic agent upon itself, it will follow that we have misnamed the poles of the magnet. There can be no doubt that the force subsisting between a magnet and the earth resembles that which is exerted between two magnets. It would therefore be more proper to reverse the names of the poles; for as poles of opposite names attract each other, that which is directed to the north pole of the earth is the south pole of the magnet. For some reasons, the alteration of terms might even now be desirable; but so many inconveniences arise from a change of nomenclature, that it is generally better to keep an inaccurate term than to confuse facts by the adoption of a better, and especially when those terms are in common use among practical men.

These preliminary statements will enable us to explain the action which subsists between a magnet and the earth, and the variations to which the directive power is subject. The facts will perhaps be more intelligible if we imagine the earth to be a magnet, or rather to enclose a magnet

extending from north to south, having a revolution round a small circle in both hemispheres. But, at the same time, the reader must bear in mind that the hypothesis is only employed for the sake of illustration.

The poles of a magnet freely suspended do not point to the poles of the earth's rotation, and hence we may deduce that the poles of rotation and the terrestrial magnetic poles are not situated in the same point. This circumstance may possibly have led the navigators, who first employed the magnet to direct their course over unknown seas, into many errors, and the inaccuracies which we sometimes detect in their observations may frequently be traced to this cause. But the variation, and the changes to which it is subject, do not in any degree affect the practical utility of the magnetic needle, when employed by the mariner to direct him from shore to shore over known and unknown seas.

The application of the directive power of magnets has done more to extend our acquaintance with the superficial character of the earth and the condition of its inhabitants, to extend commerce, to promote manufactures, and to civilize mankind, than any other scientific fact. It is true that navigation in a great degree depends upon astronomy, but it is scarcely possible to imagine how the sailor could dare a passage over the vast wild of waters, had he not the compass as his director. The heavens, covered from day to day with an impenetrable curtain, would be a chilling anticipation to the mariner, sufficient to quench the most enthusiastic ardor for discovery and commerce; but with the magnet he is comparatively safe; for though causes do exist by which the directive power may be destroyed, yet even the voyager may be put in possession of means by which to restore it; and it is a singular circumstance, that the agent which destroys can also restore. Several instances have occurred in which vessels have been struck with lightning, and the passage of the electricity through the magnets has either destroyed or reversed their polarity. It is seldom that the mariner possesses the means of inducing again the same power, though an electrifying machine and a large Leyden jar are all that would be required for the purpose, for it is well known to the electrician, that the magnetic power may be produced by passing electricity in an accumulated state through ferruginous substances. These accidents, however, are by no means frequent, and their number bears no proportion to what might be anticipated from the known frequency of the cause of disturbance, and in no instance has the spirit of discovery been retarded by the fear of accidents; but, with the compass in his hand, man has traversed deserts and oceans, introduced civilization and the arts of life into the most inhospitable and barbarous climes, and established that communication between nations which must ultimately be productive of the greatest possible advantages to society at large.

We are sometimes almost persuaded to believe that terrestrial magnetism was expressly provided to facilitate the efforts of man in extending the beneficial influence of knowledge, and to encourage the feeling of curiosity by which he is so much governed in all his determinations and actions. That this was one of the motives which influenced, if we may so speak with reverence, the Eternal Mind, is probable, but we can assign no limit to the influence of the magnetic principle, as developed on the surface of the earth. Philosophers have been unable to trace any positive connexion between the phenomena which seem to be the necessary results of the terrestrial constitution of matter, and terrestrial magnetism; yet it is possible that climate may be in some degree under its control, electrical phenomena may be governed by it, and the position or activity of volcanoes may be determined by its intensity and force.

The view we are accustomed to take of material creation is so imperfect and confined, that appearances seem entirely independent the one of the other, and the system of the world to be, as it were, disjointed and broken. We ought to use our theoretical opinions as mirrors, not so much for the purpose of looking at them, as of discovering some other objects by their means. The Creator must regard the universe as a mighty individuality, illustrating his wisdom and power; we see but a portion of it, and are compelled to divide and subdivide that which comes under our view, and are fortunate if we can but ascertain the cause and relations of some one, and that perhaps an unimportant phenomenon. Ultimate principles are, we believe, entirely beyond our reach; and the only reason we can give for the existence of the complex phenomena by which we are surrounded, is the will of an Almighty Mind to suport the existence of animal life in a pleasurable condition. But, when we look at the causes which are influential in the production of this result, we cannot but feel surprised at the means which have been employed for its accomplishment; for although we perceive their adaptation to produce the result, yet they seem to act the one against the other, and yet without interference, as though they had no other object than to prove the mutability of material existence. Destructive and conservative agents are everywhere acting in concert, and to take away one or both would be to create an inextricable confusion.

Whatever fame and splendor may attend commanding talents, we always value the virtues that make us easy and happy, and it is pleasing to think how many have been beloved and lamented by their friends for their kind affections and amiable and benevolent hearts.

Since so very few of us can expect to make this world ring with our names, our talents, or anything else, why is it not a labor most worthy of the Christian heart to endear ourselves to those around us, so that our presence may kindle a smile through the social circle, and our friends rejoice that they are brought near each other in their mutual love of us.

RURAL LIFE.

BY JOSEPH L. CHESTER.

I WELL recollect that on one occasion, a few years ago, I was wandering in the woods that surround one of our fashionable watering places. I know not why, but I was meditating upon the probable scenes of primeval paradise, and picturing to myself the infinite happiness which might be enjoyed in so delightful a place as I was then in, if the present inhabitants of the world could be restored to the purity of our first parents before the fall. But my bright visions were all dissipated by the reflection that paradise was obsolete, both in the expression and the reality. Naturally enough, I then mourned over the wretchedness of the human race, and was ready to conclude that happiness was nowhere to be found among the children of men. But just at this moment I heard the sound of many voices united in one long loud shout of glee, and, moving a few steps, I found myself the spectator of a scene which our artist has faithfully and beautifully depicted above. A group of rosy-cheeked children had been out gathering flowers for some village *fete* in the evening, and by common consent had met at this spot, on the conclusion of their labors, and the shout which I had heard was the greeting which the last of the party received as she came in with her apron full of wild roses and honeysuckles. The rendezvous itself might well have been a fac-simile of some scene in paradise. It was an open spot in the very midst of the woods, to which a narrow path led from the distant road. It was on the bank too, of a wild and beautiful stream, clear as crystal, and close under the trunk of a large oak there dashed a small and lovely cascade. Tired with their ramble, the children deposited their baskets on the ground, and sat down in pairs, as children always will do, to rest. But when did a child ever rest, save when asleep. After sitting a few moments, one of the party suddenly recollected that it was May-day, and then they must have a May-queen. The common voice soon fixed on the eldest, though by no means the prettiest girl, and she, blushing and bashful, was forced to consent. A wreath was instantly formed, and, standing up with a large bunch of roses in her hand, she was crowned, by the hand of another, the queen of the day. Then broke out from all their lips another shout of glee that has been sounding in my ears till this day, and she was then subjected to the kisses of all the party. Even the little spaniel raised his head and barked till the tears stood in his eyes. As I gazed upon this scene all my reflections concerning the misery of man faded away, and I could not help saying to myself, "Paradise never witnessed aught like this."

There is something in rural scenery and rural life that creates in man better and purer feelings. Shut up amid the streets of a crowded city—doomed to hear for days and years the hum and the noise of rolling vehicles and stiff machinery—breathing a thick and murky atmosphere—pained with the sights of poverty and wretchedness, tha•

hourly meet his eye—the citizen is the most miserable of all humanity. His feelings become numb and deadened—and his senses even lose half their faculties. But he, who lives in the country, surrounded by the beautiful scenery that is fresh from nature's hand, breathing the pure air of heaven—listening to the music of the winged creation, sees and hears nothing but tends to elevate his affections and keep in constant exercise the purest and noblest feelings of our nature. His heart expands as he looks abroad on the bounty and beauty of nature, and he, and he only, is eminently fitted to feel the full force of that sentiment of the poet:—

"My Father made them all."

Again, the comparative advantages of a city and a country life are worthy of notice. Without busying ourselves about which is the better situation for the man of business in his business character, we will only examine the advantage arising to him in the country, as regards his mental and moral character. The man who lives amid rural scenes—the simple cultivator of the soil—enjoys more privileges of communion with his Maker, through the medium of his handiwork, than the citizen who sees nothing but the work of art. The former is in league with the laws of the universe, so to speak, for he is dependant upon them for his daily bread. It is his alone to watch the progress of the little seed through all its various stages and transformations uniil it becomes, as it were, the father of many nations. And does he attribute all this to blind chance? Does it not rather compel him to recognise the powerful hand of a superior Being who "clothes even the lilies of the field?" There is not a single act in which the farmer engages, but brings home to him a fresh repetition of the fact of the existence of a God. The felling of a tree—the ploughing of the earth—the sowing and the tillage of the soil—the nurturing of flocks and herds—all force this truth upon his mind, and then, as a natural consequence, he sees also the wonderful wisdom and goodness of the Almighty, in providing for and sustaining every object in creation, both animate and inanimate. Not only this, but he is in continual converse with all the sublimer works of nature and also all the more minute. The thunder and the lightning—the storm and the sunshine—are his constant companions. The birds of the air, and the merry insects, as they chirp out their songs of praise, inevitably lead his mind to the contemplation of the object of that praise. The purling of a simple stream, and the dashing of a petty cascade—the rustling of forest leaves, and the fragrance of springing flowers, keep the impression still firm upon his mind. The changing seasons also furnish him with reflections on the power and goodness of God. Now, to all these influences, the citizen is almost a total stranger. He seldom feels them, except when he visits the country for a few weeks in the summer, and then, his mind is so occupied with the novelty of the scene that he hardly finds time to revert to the Author of all.

These reflections certainly furnish an argument why the farmer should prize the privileges which he enjoys, and also why he should strive to recognise the hand of God in everything he sees and does.

There is one other consideration which I wish to notice, and that is produced by the engraving at the head of this article, viz, that just such a spot as is there represented is one of the fittest places in the world to which a person may retire for the purpose of solitary communion and prayer with and to his Maker. What place more proper and more in accordance with the gushing feelings of the full heart, than that where he is surrounded by the most quiet and beautiful works of the Being whom he seeks?

"Then away to the forest, where tall trees are bending
Their green-mantled summits beneath the wild storm;
Where lightning-lit vines, in their flame-wreaths ascending,
Enwrap in their folds the oak's patriarch form:
When the tempest-born whirlwind in madness is rushing
Against the firm trunks, and their giant forms crushing,
When its furious roar every low breeze is hushing—
Then haste to its depths and thy *matins* perform."

MERCANTILE BIOGRAPHY.

STEPHEN THEODORE JANSEN.

Every nation, in almost every age, can boast of its distinguished merchants, celebrated as well for their unbounded enterprise and devotion to the public good, as for their moral worth and sterling honesty of character; and in the brief sketch of one thus ennobled, may be traced the history of thousands. Since the period when first gleams of enlightened knowledge broke in upon the dark gloom of the middle ages, dispersing and gradually destroying the deep-rooted prejudices which existed against mercantile pursuits, and obliterating the contempt with which those engaged in them were viewed, the whole maritime and enlightened world have chronicled in golden characters the unnumbered benefits which have resulted from the honorable career of mercantile men; and although their individual history has been but scantily preserved, yet no class or profession stands so prominently forth upon the records of the past as the benefactors of the human race. The great interests which have been created by their adventurous and enterprising spirit, have blended themselves intimately with the welfare and happiness of society, and as they required the fostering care and protection

of wise and enlightened legislation, new and beneficial laws have been called into existence; and in this manner the intercourse between nations has become modified and softened, and the internal jurisprudence of civilized countries greatly improved, and placed upon a more just and liberal foundation. That the moral and intellectual superiority of the merchants has effected these vast changes in the condition of mankind, we are far from asserting, although their entire success and ultimate prosperity depending, as they ever must, upon the sacredness with which their contracts and engagements with each other are performed, a more scrupulous integrity and undeviating honesty would be observed than could be found in those relations and transactions in life where less confidence is reposed, and a greater degree of caution can be exercised.

Upon their honorable feelings is based the reliance with which their promises are regarded; and the respectable merchant looks upon the dishonor of his note as the public dishonor of his name, and will make the heaviest pecuniary sacrifices eagerly, and with the utmost cheerfulness, to preserve his reputation untarnished, and his word religiously sacred. It is true, that, within the last few years, many individuals have embarked in mercantile pursuits, and, regardless of the legitimate objects of their profession, have madly rushed into the wildest speculations which the phrensy of modern times has created; and, criminally indifferent as to the end of their career, have finally plunged their trusting and unsuspecting creditors into utter ruin, and themselves into the most irretrievable bankruptcy; but such instances, when compared with the vast numbers composing the mercantile portion of community, are rare and insignificant, and afford a dangerous criterion by which to estimate the character of American merchants. Although the commercial embarrassments under which they have for some time labored were seldom, if ever, paralleled, yet the noble sacrifices and persevering exertions they have made to preserve their engagements inviolable, are eminently calculated to exalt their character for integrity and honesty, and cannot fail to increase that confidence in their uprightness to which they have ever been strongly entitled.

But, notwithstanding the high opinion we entertain of the merchants of our own land, we do not claim for them a more exalted standard of character than we are willing to accord in many instances to those of other nations, and particularly to those of England. The history of that country presents to our view thousands upon whom we look with feelings of as deep satisfaction and heartfelt pride, as we experience for the mercantile portion of our citizens; and in presenting the brief biography of an English merchant of the last century, distinguished as well for the prominent and noble station he occupied in public life, as for the still more honorable career he pursued after his prospects had been blighted and destroyed by the unforeseen disasters to which the property of those engaged in commercial pursuits is ever exposed, we feel confident that the great proportion of merchants in the United States, while they cannot but admire his integrity and liberality, will be ever ready to imitate his disinterested and ennobling actions.

Stephen Theodore Jansen was descended from an English family of high respectability, and after receiving an education eminently calculated to qualify him for mercantile pursuits, and devoting the usual period of time in a counting-house to the acquisition of such a knowledge of business as would enable him to engage with safety and profit in extended commercial transactions, he established himself as a merchant in London. Although possessed of an enterprising and adventurous spirit, it was ever tempered and restrained by a judgment cool, calculating, and profound; and his extended commercial operations being wisely and promptly undertaken, and managed with the utmost sagacity and prudence, were seldom unsuccessful. Fortune invariably favored him, and in the middle of the seventeenth century, he was one of the most prominent and wealthy merchants in the British metropolis. Commercial pursuits were at this period deemed highly honorable, and those engaged in them were not unfrequently chosen to offices of dignity and trust. The reputation which Mr. Jansen had acquired, not only as a distinguished merchant, but as a man of rare and solid attainments, a warm friend of the people, and an able advocate of their true interests, was a sure passport to political eminence; and he was accordingly nominated as a candidate to represent the city of London in parliament.

Being at that period engaged in a vast and lucrative trade, requiring his active exertions and unremitted attention, he saw that his pecuniary interests would be likely to suffer severely if he should neglect them to serve his country in the legislative halls of the nation; but, casting aside all personal considerations, and regarding only his duty to his sovereign and his fellow-citizens, he suffered his name to be used, and was elected to the house of commons by an overwhelming majority.

The manner in which he discharged the responsible duties of his trust in the station to which he had been chosen, more than satisfied the high expectations of his friends, and fully met the anticipations of those through whose influence his election had been effected. His parliamentary career was distinguished for independence, undeviating honesty, and the most laborious industry. His devotion to the public good kept him aloof from the slavish trammels of party, and caused the most violent partisans to admire and respect him. The patriotism by which he was actuated made him spurn and trample upon every selfish or mercenary consideration, and secured the unbounded love and confidence of his constituents; while the perseverance and untiring zeal with which he advocated any measure calculated to promote the general welfare of the nation, all combined to render him one of the most useful legislators in parliament. While he was thus earning for himself a high and honorable reputation as a public man, his business was necessarily neglected, and consequently languish-

ed. The same good fortune no longer smiled upon the adventures that were undertaken for his benefit; and where sure and rich profits were anticipated, heavy losses frequently resulted; and when the term for which he was elected had expired, his affairs, although not seriously involved, were in an unpromising condition, and his prospects gloomy and discouraging.

Could he have been permitted to direct his undivided attention and sole exertions to the profitable re-establishment of his business, his embarrassments would have speedily removed, and prosperity would again have gleamed upon him; but this was denied him, for so popular had he become, and so highly were his public services prized, that upon leaving his seat in parliament he was chosen lord-mayor of London. This distinguished honor, unexpected as unsought for, was borne by the truly noble merchant with the unassuming dignity which is ever the true element of real greatness.

Liberal, open-hearted, and generous, and ready to bestow his gold upon the needy, without exercising the mean and narrow caution of first ascertaining that they were really deserving; kind and affable to those whom fortune had placed beneath him; courteous and conciliating in his intercourse with men who were his equals in society; and dignified, yet respectful, in his demeanor toward those whose rank and station were more lofty than his own; he daily won new and flattering popularity, and continually furnished the most convincing proofs of his eminent qualifications and fitness to discharge the duties of his important office, in a manner at once just, energetic, and honorable. His entertainments, without being magnificent, were both rich and costly; and his guests were chosen for their true worth and high respectability of character, instead of being invited on account of the wealth they possessed, or the proud titles with which they were invested. His riches were at all times lavished with a liberal hand, and the many distresses he relieved, and the misery he promptly and charitably alleviated, afford ample proofs that his generosity was not misapplied.

While he was thus expending immense sums that the respectability and dignity of his high office should be maintained, and continually extending assistance to those unfortunate men around whom adversity had cast the gloom of repeated disappointments, his mercantile interests were almost wholly neglected, and the declining state of his affairs began to assume a serious aspect. The perfect system he had adopted for the management of his business at the commencement of his commercial career, and upon the foundation of which his entire success and prosperity had been built, was departed from almost as soon as the cares and anxieties of public life were thrown around him; and when his official duties had become so pressing and arduous as to render it no longer possible for him to exercise even a partial control and direction over his affairs, their embarrassment and final derangement was the speedy consequence.

Overwhelmed with the labors of his office, and deeply immersed in the study of the difficult and important subjects with which it was intimately associated, the unfortunate situation in which he was placed was hardly apparent until he had become inextricably involved in many mercantile and monetary transactions of the most injudicious and even ruinous character; and after he was fully apprized of the disheartening state of his affairs, and saw the urgent necessity that existed for prompt and untiring exertions on his part for the preservation of his credit and the prevention of utter ruin, he found it impossible to bestow upon his affairs the care and attention which their situation so urgently demanded.

His determination to perform his public services with unabated integrity and zeal, to the sacrifice of private interests and personal advantage, caused him, until the expiration of his mayoralty, to suffer his business to accumulate embarrassment; and when, at length, the termination of his official duties enabled him personally to assume the control of his long-decayed interests, he found it impossible to bring them back to a sound and healthy condition; and after struggling along for nearly a year after his mayoralty, with his prospects daily growing more dark and gloomy, endeavoring by every exertion in his power to escape the fate of final bankruptcy, every hope was at last crushed by his failure, which took place in the early part of the year 1765.

No sooner had this occurred than his creditors assembled, and after bearing the highest testimony to the distinguished services and spotless honesty of their unfortunate debtor, they voluntarily discharged him from every demand upon which he was in any manner liable.

Every farthing of his property he distributed among them, without even reserving the sum they desired him to retain; and although by their generosity he was fully exonerated from all legal claims, he was still resolved upon effecting, if possible, the full and complete payment of every debt he had contracted, and for the future satisfaction of which he deemed himself morally and equitably bound.

The opportunity soon arrived for carrying this disinterested resolve into execution. Immediately after his failure, an annuity of six hundred pounds was settled upon him for life, by several of his friends, out of which he paid annually four hundred and eighty pounds among his creditors. Conduct so truly noble excited universal admiration, and was richly rewarded.

The citizens of London, as a mark of their favor and approbation, unanimously bestowed upon him the lucrative and honorable office of city-chamberlain. Being entirely free from all mercantile engagements, with his mind relieved from the heavy load of anxiety and care which had so long preyed upon it, he entered upon the duties of his trust with alacrity and zeal, and discharged them with the same accuracy and ability for which, in his former responsible stations, he had shown himself so distinguished. A large portion of his income was set apart for the payment of his creditors, and the personal expenses he was obliged to incur were reduced within the

compass of the most prudent economy. All the luxuries to which he had been accustomed were resolutely dispensed with, and many articles which by some would have been considered necessary for the promotion of their happiness and comfort, were no longer purchased by him. In truth, he looked upon every guinea he received as the property of his creditors; and, measured by his strict sense of morality and justice, every shilling unnecessarily expended fell little short of robbery. These fees that were paid to him, in his official capacity, amounted in the aggregate to a handsome sum, and as nearly all of it was paid to his creditors, the magnitude of his liabilities was rapidly decreasing.

Within a short period after his election, his brother, Sir Abraham Jansen, a man of large fortune, died, and by his will settled an annuity upon him, of five hundred pounds per annum.

Not satisfied with the appropriation he was enabled to make for the payment of his debts from the receipts of his office, he immediately sold the whole of this annuity, and gave the full amount it brought to his creditors. In this manner was a large proportion of their demands against him discharged, and his high integrity and purity of principle nobly vindicated. As the liabilities under which he had labored dwindled into insignificance, his gifts were again generously showered upon the unfortunate and needy, and those who, in his former prosperity, had been the recipients of his bounty, were again gladdened by the pecuniary assistance he was once more enabled to bestow upon them. The truly honorable course he had so long pursued could not terminate in gloom, nor end in misfortune.

From his time of his first entrance upon the theatre of life, whether we examine his commercial or political career, his character had been clear and unsullied, and his every act stamped by the most unimpeachable integrity.

Dark disappointments and heavy losses had not altered his disposition, or changed his feelings. The adversity under which he had suffered, instead of engendering selfishness, had but made him feel the necessities of others the more keenly, and had served to call into action a still greater proportion of his benevolent disposition.

In 1776, by the death of his brother, Sir Henry Jansen, the title of baronet devolved upon him, accompanied by an increase of fortune, by which he was soon enabled to complete the payment of his debts; and, after discharging the last pound, and every farthing of interest, his life closed over a series of actions more gratifying to a noble mind than any other retrospect which the pursuits and employments of men are capable of affording. Hunt's Merchant's Magazine.

SCRAPS OF PHILOSOPHY.

BY JOHN B. SCOLES, ESQ.

THERE need be no difficulty in ascertaining the relative dignity and importance of the sciences. We have only to ascertain to what particular elements of our nature they are addressed, and what powers they call into action. As our moral faculties are infinitely superior to the rest, the science of morals, or the proper mode of developing and disciplining those faculties, stands of course the first, and very far above all others. Next in importance, is that which has for its object the development and discipline of our intellectual powers. After these, come in regular gradation, those which are calculated to improve our social condition, those which extend the bounds of useful knowledge, add to our stock of physical truths, and contribute to the external comforts of life. Such as merely minister to the propensities—that gratify the lust of gain, or increase the means of luxurious living—are the lowest in the scale.

The sources of happiness are internal. From pain and misfortune no man is exempt. But it is a law of our being to which there can be no change or exception without a change of our nature, that a happy condition of mind is the result of an ascendency of the moral and intellectual part of us; and that in just such a degree as we permit our propensities to control us, we violate this supreme unalterable law, and must suffer the penalty—which is ultimate unhappiness. All the crime, and most of the misfortune and suffering by which mankind have been desolated and afflicted, may be attributed to three causes—ignorance, deficiency of moral energy, and the ascendency of the propensities. Did men understand and observe the laws to which their bodily frames are subjected, they would be secure from many of the diseases and accidents that now befall them from a neglect or violation of those laws; and if they always acted under the influence of enlightened intellect and correct moral feeling, they would "fear God and keep his commandments," they would "love their neighbors as themselves," and enjoy the felicity of a good conscience. The ascendency of the propensities is the fertile sourcce of criminal action; a deficiency of moral energy produces a culpable indifference. The one prompts us to do those things which we ought not to do, the other to leave undone those things which we ought to have done. The indulgence of a propensity at the expense of intellect and moral sentiment may yield a temporary gratification—but no permanent enjoyment, no internal satisfaction. It injures the body, mortifies self-esteem, forfeits the respect of others—perhaps provokes their resentment and revenge, supplies conscience with her scorpion sting, and while it morally degrades a man, materially interferes with his worldly interest. Let it be remembered also, that every

such indulgence of a propensity stimulates and strengthens it. It becomes more and more craving and clamorous, until the result is the formation of a vicious habit which becomes as it were a second nature. The causes of disagreement and contention among men are their propensities. Their intellectual and moral impulses are always in harmony. But the propensities are selfish, and those of one individual will as a matter of course, conflict with the same propensities in another individual. This is the reason why some persons cannot approach each other without quarreling; why men in the same business are perpetually undermining and overreaching each other; why rogues betray and sacrifice each other; and why men are continually invading each other's rights, and rousing a spirit of retaliation. Their propensities are in the ascendant, and reason and virtue are forced to yield to the baleful influence. Sometimes everything is sacrificed to the desire of gain, and not only conscience and benevolence, but character, the sound calculations of self-interest, and every other propensity must give place to the tyranny of this predominant element of the character. Sometimes self-esteem has the evil control, and a man's pride leads him into criminality and meanness, and is an insuperable barrier in the way of success. Sometimes vanity is his besetting weakness, and it is well for him if it goes no farther than to expose his absurdities, and render him occasionally ridiculous. Sometimes a propensity which he seeks to dignify by the name of love, impels him to the grossest folly or the darkest transgression. Sometimes a spirit of guile leads him to deceive and play the hypocrite. Sometimes the blind impulse of revenge incites him to seek the destruction of another, though by so doing he ensures his own. Such are the propensities when they are permitted to usurp the government. Their proper place is that of continued subjection to the intellect and moral sentiments. How few of us seem to be aware of this solemn truth, though observation and experience combine in enforcing it! Fanatics have seen the disastrous effects of an uncontrolled propensity, and have foolishly supposed that its absolute suppression or eradication was a religious duty. No propensity is evil in itself, otherwise it never would have been given to us. It was intended as an element of strength, an impulse to exertion in the path of duty; and such it is, when properly guided and controlled. Like fire, it is a good servant, but a bad master.

The intellect of Bacon seems to be better understood and appreciated now, than it ever was before. His fame brightens with the lapse of time. As the boundaries of science are extended, as new truths are discovered by the application of his mode of philosophizing—we naturally feel inclined to pronounce his name with grateful eulogy. It has been said of him, that he anticipated the progress of the human understanding by a century and a half. Dugald Stewart takes an admirable view of his intellectual character in his introduction to the Supplement of the Encyclopædia Britannica. Hume did not understand and could not appreciate it. There was no sympathy between the cold sophist, and one who like Bacon, combined in a greater degree than any man that ever lived, the highest reasoning powers with the richest imagination. Hume had no ideality. His philosophy was specious, but shallow and unsound. His intellectual perception was acute; but his judgment was weak, and his moral sensibility was neither very elevated, nor very nice. Unsustained by fixed principles either of religion or morality, the mind of Hume was essentially a skeptical and doubting one. It had no love of truth as truth, and delighted in the subtile speculations and worthless refinements of that metaphysical sophistry which Bacon treated with such merited contempt, and which it used as a diabolical instrument to assail the foundations of all religious and moral belief. No wonder that Hume could not appreciate Bacon's genius. No wonder that he should suppose its most admirable quality to be its singular universality—in which respect Bacon does not stand alone, nor perhaps even the first among the moderns; and that he should be wholly insensible to the antique splendor of a style so strongly in contrast with the tame neatness of his own. The great superiority of Bacon to other men was in the native vigor of intellect, which enabled him to break through the fetters of the schools, to rise above his age, and to proclaim to the world a mode of philosophizing at once simple and true, and which will be recognised as such through all future time.

> "Bacon, like Moses, led us forth at last,
> The barren wilderness he passed,
> Did on the very borders stand
> Of the blest promised land;
> And from the mountain-top of his exalted wit,
> Saw it himself, and showed us it."

This is the majesty of Bacon's genius. And it has been well said, that to accomplish this mighty work, it was necessary that he should have been in active life—a man of the world—so as to look with an impartial eye and unprejudiced mind upon all those systems to which the learned were devoted.

Had he been a mere schoolman, he might have been bigotly attached to what he examined and condemned with a sound and unerring judgment

Hume erred, when he pronounced Galileo a greater man because he was a greater astronomer; and they err equally, who pretend that his aim was to direct the efforts of mind toward the acquisition of that species of practical knowledge which enables us to improve our external condition, to the neglect of those higher departments of philosophy, the knowledge of our intellectual and moral nature, and the duties and obligations that flow therefrom. Were this indeed true, it would be the severest condemnation of his philosophy. But such is not the tendency, nor was such the object of Lord Bacon's labors. It will not be denied that turning with disgust from the unsatisfactory metaphysics and quibbling casuistry of his day, he may have uttered expressions which would admit of this misconstruction; but there cannot be a doubt that any discovered truths in the sublime sciences of mind and morals would have been hailed by him with proportionate eagerness. "In laboring indeed to correct the direction of study, and to withdraw it from the unprofitable subtleties of the schools, it was necessary to attract it powerfully toward outward acts and works." But his mode of philosophizing was for all subjects, as it is destined to endure through all time.

Were it true that intellectual and moral greatness are always united, then would Bacon have been as unrivalled a moralist, as he was a philosopher. But we know that such was not the fact. When Pope called him "the wisest, brightest, meanest of mankind," he sacrificed truth to point—no uncommon thing in a professed satirist. Still, to say the least of it, Bacon was guilty of culpable weakness—perhaps we might justly say, of meanness. He allowed his servants to take presents from the suiters in his court, and the only excuse that he could offer was, that this corrupt practice had existed with his predecessors, and he had not sufficient decision of character to put a stop to what he knew to be so grossly improper. His appearing as one of the counsel for the crown against his early friend and liberal patron Essex on that memorable trial which consigned him to the scaffold, must have been prompted either by a servile timidity which trembled at the thought of offending by his absence, a haughty and vindictive queen; or infinitely worse, by a despicable desire to court her favor at the expense of principle, honor, and humanity. We are unwilling to believe the latter. We have no evidence to sustain it. Bacon was unquestionably weak. We cannot deny him to have been benevolent; and among his papers was found a prayer written in his own hand, which Mr. Addison says seems rather like the devotion of an angel than a man. He wanted the firmness—he himself confessed with regret and humiliation, that he wanted the firmness which can alone enable a man to keep morally erect amid the difficulties, the conflicts, and temptations of public life. This was the defect of his character. It brought degradation and disgrace upon him while living, and has subjected his memory to much unmerited obloquy. Some have seemed to derive a strange gratification from exposing and exaggerating the moral shades that dim the lustre of his fame. Perhaps its excessive light oppressed their mental vision, and they felt the necessity of interposing such a screen. While we admit and lament his failings, we would most willingly lose all remembrance of them in a reverential feeling of gratitude for the invaluable benefits which his intellectual labors have conferred upon our race.

In public, as in private life, an upright course is not always a successful one. But

> "More true joy Marcellus exiled feels,
> Than Cesar with a senate at his heels."

Still, it is by no means so likely to be an unsuccessful one as many imagine. With reference merely to worldly prosperity—it will generally be found to be the true course in the long run. When it is otherwise, the cause may sometimes be detected in the ignorance which cannot appreciate or the corruption that will not endure a virtuous statesman; but can quite as often be traced to the harshness and austerity of the individual himself—to his ignorance of the innocent arts of pleasing, or his refusal to employ them.

DIAMONDS.

Hunt's Merchant's Magazine and Commercial Review for December, among other papers of value, contains an interesting article on the "Commercial value of Gems." The writer enters into a somewhat enlarged account of the whole subject. He gives the early history of gems, the art of sculpturing them, the engraving, sawing, drilling, grinding, polishing, raising the brilliancy, and the setting of them, which form no small part of the labor connected with this trade.

As an article of commerce, the value of diamonds is measured by various circumstances, among which are their size, form, weight, color, purity, and cutting. In the diamonds which have been polished, the most valuable are the limpid, which command a price twice as great as those which are tainted with gray, black, yellow, or vitrous spots. The quality of diamonds, in reference to their purity and transparency, is described by the terms the *first*, *second*, and *third water*. The first are those which are of the

utmost clearness, and free from any fault; the second are marred by dark spots or flaws; and the third are of the least value, being tinged with brown, yellow, green, blue, or blackish flaws. Nor is the cutting of the diamond of less importance than its quality, for this is regulated by its form. The proportion of the height to the circumference of the diamond, and the regular order of the sides, tending to increase its brilliancy, governs, in some measure, its value. Hence the brilliant is of greater value than the rose diamond, and the rose diamond than the table-stone. Although the value of the different species of the diamond is regulated by certain fixed rules known to jewellers, still it is depending so much on varying circumstances, that no permanent valuation can be established for the different sorts. It appears, however, that they advance in a geometrical ratio according to their form.

The different forms in which diamonds are cut by the Dutch and English, and thus varying in value according to their size and quality, are familiar to all who are conversant with our jewellers' shops. The form most calculated for lustre is the brilliant.

The *rose diamond* that is usually cut from the gem which is too thin to be cut into a brilliant without much loss, has only a crown, and is formed of equilateral triangles. It is composed of two rows of three-sided facets. Fragments of rose diamonds which are very small are sometimes seen, and also small roses for ear-drops.

The *table diamond* is a flat gem, without much depth or lustre. It is usually cut into a table, with four planes and eight facets.

Peculiar care is required in the cutting of gems depending upon their form and color, in order to exhibit their beauty with the greatest effect. The *step*, or *pavilion cut*, is especially adapted to colored gems, as the light is reflected by this form in the highest degree.

The *mixed facet cut* is compounded of the brilliant and pavilion cuts, the first of which is on the crown, and it contributes greatly to increase the lustre.

The *elongated brilliant facet cut* is sometimes used in the cutting of stones.

The *table cut*, appropriate for sealstones, is composed of an uneven and conchoidal table, surrounded by one or two circular rows of facets.

The *double facet cut* has a crown composed of two rows of facets, with a collet of a pavilion form, and is well adapted to conceal any flaws or fissures in the stone.

The *cabochon cut* is either flat, convex, or double convex, that is, arched; it may be on both sides, or only on one. This cut is particularly applicable for semi-transparent gems, or those which display their peculiar colors, such as the opal, moonstone, &c.; or collect the light in a small space, on one or several parts, according to the convexity they have received. The cabochon cut may have one, two, or more rows of facets, and opaque stones receive with advantage the facets over the whole surface. Garnets, for instance, which are generally of a dark color, are cut *en cabochon*, the lower plane excavated in a circular form, and the upper plane all around with facets. Other gems, the interior faults of which cannot be concealed, may be improved by this cut, giving them more transparency, vividness of color, and a greater degree of fire.

As allusion has before been made to the great value of diamonds, it may be mentioned that, at a very extensive sale of gems made in London during the year 1837, there were sold an amount to the value of nearly two hundred and twenty-nine thousand dollars. Among these there were a pair of ear-rings, formerly the property of Queen Charlotte, which produced fifty-five thousand dollars; a sapphire, set with brilliants, two thousand four hundred and sixty-five dollars; brilliant drops, which were stated to have formerly belonged to Marie Antoinette, eight thousand eight hundred and seventy-five; a Turkish dagger, mounted with brilliants and rubies, sold for four thousand dollars; and the celebrated Nassauck diamond was purchased at thirty-six thousand.

It may be proper here to notice the principal diamonds which are now known to exist in Europe. A diamond in the possession of the grand mogul, is in form and size like half a hen's egg. Its weight is two hundred and ninety-seven and three-sixteenths carats. It is cut in a rose form, is perfectly limpid, and it is valued at four millions of francs. A diamond found upon the island of Borneo, was formerly in the possession of the rajah of Mattan. This is of an egg form, and of the first water. That jewel weighs three hundred and sixty-seven carats. A diamond formerly belonging to the sultan of Persia, about the size of a pigeon's egg, was purchased by the Emperess Catharine for about ninety thousand pounds, and an annuity of four thousand. One weighing a hundred and thirty-eight and a half carats is in the treasury of Rio Janeiro; and a single gem is possessed by the Austrian crown, which is valued at one hundred and nine thousand two hundred and fifty pounds. The famous regent or Pitt diamond, which was purchased by Mr. Pitt, when governor of Bencoolen, in Sumatra, and by him sold to the regent duke of Orleans, who placed it among the crown jewels of France, was valued by a commission of jewellers, in 1791, at twelve millions of livres. Another diamond, belonging to the crown of France, is in the form of a pear. It is cut as a double rose diamond, and was purchased for six hundred thousand livres. Among the crown jewels of France there is one diamond of a sky-blue, and valued at three millions of livres. A rough one in the possession of the prince regent of Portugal, is said to weigh an ounce troy.

Two large diamonds belong to the Turkish crown, one of which is valued at eighty thousand ducats; and one was discovered in Brazil, in 1780, which is now at Rio Janeiro, weighing seventy-two carats and three fourths grains. Another was found at the same place, weighing seventy carats. It is said that the largest diamond known in the world, is now in the possession of the king of Portugal. It is in its rough state, being the size of a pigeon's egg, and has

been valued at the enormous sum of fifty-seven millions of pounds sterling, although it is the opinion of many jewellers that is a white topaz.

A brief description of the crown jewels of Victoria, the reigning queen of England, may, perhaps, here be interesting. The crown itself weighs about three pounds, and is composed of hoops of silver, enclosing a cap of blue velvet. These hoops are studded with precious stones; and upon the crown is a ball, set also with precious stones, and surmounted with brilliants in the form of a Maltese cross. The rim is flowered with Maltese crosses and the *fleurs-de-lis*. In the centre of the large Maltese cross is a splendid sapphire, and in front is the immense ruby once worn by Edward the black prince. Numerous other precious stones, rubies, pearls, and emeralds, are intermingled with these gems down to the rim, which is formed of ermine. The following is its estimated value:—

Twenty diamonds round the circle, 1,500*l.* each,	30,000*l.*
Two large centre diamonds, 2,000*l.* each,	4,000
Fifty-four smaller diamonds, placed at the angles of the former,	100
Four crosses, each composed of twenty-five diamonds,	12,000
Four large diamonds on the tops of the crosses,	40,000
Eighteen diamonds contained in the fleur-de-lis,	10,000
Eighteen smaller diamonds, contained in the same,	2,000
Pearls, diamonds, &c., on the arches and crosses,	10,000
One hundred and forty-one diamonds on the mound,	500
Twenty-six diamonds on the upper cross,	3,000
Two circles of pearls about the rim,	800
	111,000*l.*

PHYSICAL IMPROVEMENT.

We hear much of the improvements of our age. The wonders achieved by machinery are the common talk of every circle; but I confess that, in me, this gathering of mechanics' apprentices, whose chief bond of union is a library, and who come together weekly to refresh and improve themselves by the best instruction which the state of society places within their reach, is more encouraging than all the miracles of the machinist. In this meeting I see, what I desire most to see, that the mass of the people are beginning to comprehend themselves and their true happiness; that they are catching glimpses of the great work and vocation of human beings, and are rising to their true place in the social state. The present meeting indicates a far more radical, more important change in the world, than the steam-engine, or the navigation of the Atlantic in a fortnight. That members of the laboring class, at the close of a day's work, should assemble in such a hall as this, to hear lectures on science, history, ethics, and the most stirring topics of the day, from men whose education is thought to fit them for the highest offices, is a proof of a social revolution, to which no bounds can be set, and from which too much cannot be hoped. I see in it a repeal of the sentence of degradation passed by ages on the mass of mankind. I see in it the dawn of a new era, in which it will be understood, that the first object of society is to give incitements and means of progress to all its members. I see in it the sign of the approaching triumphs of men's spiritual over their outward and material interests. In the hunger and thirst for knowledge and for refined pleasures, which this course of lectures indicates in those who labor, I see that the spirit of man is not always to be weighed down by toils for animal life, and by the appetite for animal indulgences. I do attach great importance to this meeting, not for its own sake or its immediate benefit, but as a token and pledge of a new impulse given to society through all its conditions. On this account I take more pleasure in speaking here, than I should feel in being summoned to pronounce a show-oration before all the kings and nobles on earth. In truth, it is time to have done with shows. The age is too stirring, we are pressed on by too solemn interests, to be justified in making speeches for self-display or mere amusement. He who cannot say something in sympathy with, or in aid of, the great movements of humanity, might as well hold his peace.

Dr. Channing.

GEMS OF THOUGHT.

We do not want precepts so much as patterns.

The worthiest people are the most injured by slander; as we usually find that to be the best fruit which the birds have been pecking at.

A miser grows rich by seeming poor, an extravagant man grows poor by seeming rich.

There is not greater difference between the living and the dead, than between a wise man and a blockhead.

Nothing ought to be more guarded against in a free state than making the military power a body too distinct from the people.

Profusion restores to the public the wealth which avarice has detained from it for a time.

The difference between a rich man and a poor man is this—the former eats when he pleases, the latter when he can get it.

The weather is not a safe topic of discourse; your company may be hypish; nor is health—your associate may be a malade imaginaire; nor is money—you may be suspected as a borrower.

A titled nobility is the most undisputed progeny of feudal barbarism.

To attempt the conversion of a heretic by force is as absurd as to attempt storming a castle by logic.

The Miraculous Draught of Fishes.

No. VI.—THE MIRACULOUS DRAUGHT OF FISHES.

The cartoon of Christ calling Peter and Andrew, or, as it is more frequently named, the Miraculous Draught of Fishes, has fewer figures and a less complicated arrangement than any other of the series. Nevertheless, it has all Raffaelle's characteristics; simplicity, perspicuity, emphatic expression, and clear development of the story. Christ having entered the boat for the purpose of addressing the people who had collected on the shore of the lake of Gennesaret, and having finished his discourse, desired the fishermen to "launch out into the deep, and let down the nets for a draught. Simon Peter answering, said unto him, Master, we have toiled all night and have taken nothing; nevertheless, at thy word I will let down the net." Christ's discourse and the Peter had been previously listening ensued, conmiraculous draught of fishes which convinced Peter that he was in the presence of a being of superior nature; and his exclamation, "Depart from me, for I am a sinful man, O Lord!" expresses the fear and reverence consequent on that impression. This is the point of the narrative which Raffaelle has chosen: Peter has fallen before Christ, who reassures him with a expression of gentle benignity, announcing at the same time the high vocation to which he appointed him—"Fear not, from henceforth thou shalt be a fisher of men." Andrew, the other of Peter, who likewise became a disciple himself before the Savior. In a to produce designs comprehending the acts of the apostles, the propriety of choice in this subject is obvious: one of the most extraordinary circumstances in the history of Christianity is the astonishing results produced by agents of such humble origin, and apparently so inadequate to so mighty a task. Here we see them engaged in their original avocation; but notwithstanding the homely garb of the fishermen, we perceive in the grand character of their heads, and in the solemn sentiment which seems to inspire them, indications of power which show them to be fit instruments for the great undertaking which they were called on to accomplish. The figure of Christ, who sits apart in the stern of the boat, is simple and majestic. The second boat is occupied by Zebedee and his two sons, James and John, who also "forsook all, and followed Christ." In the cartoon, however, they are merely seen at the moment, when, having been called by Peter and Andrew to their assistance, they are strenuously endeavoring to draw up the overladen net. The action of these two figures, beside giving a picturesque variety to the effect, adds force to the mental expression of Peter and Andrew.

Penny Magazine.

Some people are crooked sticks in the world; they are ever displeased with themselves and mad with everybody else.

If we had no faults ourselves we should not take pleasure in observing those of others.

FARMERS' DEPARTMENT.

COMPARATIVE ADVANTAGES IN THE CULTIVATION OF LARGE AND SMALL TREES.

The Albany Cultivator contains an estimate, from D. W. Grant, Esq., of Bloomfield (Conn.), of the comparative expense, crops, and profits, of two farms, one of twenty, and the other of one hundred acres, to which we would call the serious attention of farmers. In the note which accompanied the estimate, Mr. Grant remarks:—

"I commenced farming 12 years ago, with 500 acres of improved land, on the old system of farming. As I have been unable to personally labor, I have been under the necessity of hiring all my labor done, and I found by cultivating middling lands, and sending men to a considerable distance to work, that the expenses absorbed the income. I began to change my mode of practice some years since, and sold one half of my acres, and by improving the remaining half, I have now the pleasure of seeing them produce more than the whole formerly did; and I have no doubt but that I could sell the one half I now have, and in time, with labor judiciously applied, make the remaining half produce as much as the whole does, and with greatly increased profits. If you wish to stop our young men from going from the old states to the west, advocate the system of small farms. On this depends, in my opinion, the future wealth of the old states. There is no necessity for emigration from the east to the west for one hundred years, and I have no doubt by diminishing the size of our farms, and giving them a more thorough and better cultivation, our wealth and population can be doubled in twenty years. Our Agricultural society of Hartford county, have offered a premium for the best farm containing not less than twenty acres. If you will examine the statements I send you I think you will agree with me that they are about right."

Mr. Grant, in his estimate supposes the capital invested in the two farms to be the same, viz, 100 acres at $40 per acre, and 20 acres at $200 per acre, in both cases $4,000. His estimate of the crops and their value on the 100 acres, is as follows:—

Twenty acres in mowing (1 tun to the average produce of the land in Bloomfield), worth to feed stock $7 per tun, 20 tuns.		$140 00
Ten acres corn, 50 bushels to the acre, at 50 cts.		150 00
Ten loads of corn stalks at $3 per load,		30 00
Three acres potatoes, 150 bu. per acre, at 16 cts.		72 00
Seven acres of rye, 12 bu. per acre at 75 cts.		63 00
Ten acres of oats, 20 bu. to the acre, at 30 cts.		60 00
The mowing and cultivated crops take up 50 acres of the farm, leaving 50 acres for pasturing, which will keep and keep well, 1 yoke of cattle, 7 cows and a horse, 10 head at $6 each,		60 00
Produce worth to feed the stock		$575 00

Mr. Grant's estimate of the expense of cultivating each of these crops is drawn up with great minuteness, and a careful examination has convinced us with a close approximation to the truth; but our limits oblige us to omit the items, and we only give the aggregate of the expenses, which, on the whole 100 acres, amounts to $451 80

Leaving a net profit on the large farm of $120 20

Statement of the produce and expense of 20 acres of rich land.

Four acres of mowing, 5 tuns to the acre at 2 cuttings; 20 tuns of hay, worth to feed to stock $7 per tun,	$140 00
Two acres of wheat, 30 bu. to the acre, $1 per bushel,	60 00
One acre of corn, 90 bushels, at 50 cts. per bushel,	45 00
Four loads of corn stalks, $3 per load,	12 00
One acre of sugar beets, 800 bushels at 1 shilling per bushel,	134 00
One acre of potatoes, 400 bu. at 1 shilling per bushel,	67 00
Half an acre of ruta baga, 450 bushels, at 12½ cents per bushel,	56 00
Half an acre of carrots, 440 bushels, at 1 shilling per bushel,	73 67
The mowing and cultivated crops take up 10 acres, leaving 10 acres for pasturage, which will keep, and keep well, 7 cows, a yoke of cattle, and a horse, 10 head, at $6 each,	60 00
Produce worth to feed the stock,	$647 67

As before, Mr. Grant's estimate of the expenses is made for each crop, but we omit them, with the exception of the corn, which we give as a specimen, and to show that he has not omitted or underrated any important point.

Cost of cultivating an acre of corn.

Carting and spreading 30 buck loads of manure,	$6 00	
Ploughing turf once,	2 00	
Harrowing thoroughly,	1 00	
Planting	2 50	
Hoeing three times,	10 00	
Gathering, husking, and shelling,	8 00	
Labor in cultivating one acre of corn.	$29 50	
The aggregate of the expenses on the 20-acre farm, including labor, seed, repair of fences, &c., is,		$206 14
Net profit on small farm,		$441 53

To our western friends it may seem somewhat strange to see the product of 20 acres of grass put at 20 tuns of hay, and that as well as the

other crops on the 100 acres may appear to them underrated. To us, however, who remember the average crops of common farms in the New England States, Mr. Grant will seem very near the mark, and his estimate of crops, under the old system, a liberal one; and we have seen no estimate which places the results of good and bad farming, of applying capital to land, instead of drawing it away from it, in a more forcible, and as a whole, indisputable manner than Mr. Grant's. The most profitable part of every man's farm is his garden, and Mr. Grant's 20 acres is but a garden on a large scale.

WHY DON'T HE DO IT.

When the Farmer *knows*, that a gate is better, and, as a time-and-labor-saving fixture, cheaper, than a set of bars and posts, and without calling on a carpenter he can himself make one, *Why don't he do it?*

When he has no other fastenings to his gates and barn-doors than a rock rolled against them, and in a single evening after supper is able to make a better one, *Why don't he do it?*

Or when he sees the boards dropping from his barns and out-buildings, and like heaps of rubbish lying in piles about his premises and need only nailing on again, *Why don't he do it?*

Or if he is afraid of the expense of nails and is always crying up the maxim of Dr. Franklin, to "save the pence and the pounds will take care of themselves," and he knows that the same Dr. Franklin also said that "many men are penny wise and pound foolish," and he is not careful to think of the precept contained in the latter, *Why don't he do it?*

If it is a saving of nearly half the manure of a farmer's stock by keeping them shut up in yards, instead of running at large through most of the winter, *Why don't he do it?*

If he knows that many of his fields would be greatly improved by ditching, and by the removal of large stumps and stones, *Why don't he do it?*

And when he knows that his pastures yield nearly double the feed, and of a better quality, if the bushes were all cut and subdued, *Why don't he do it?*

And if he can add fifty per cent. to the product of his clover-fields, and even his pastures, by the use of gypsum, *Why don't he do it?*

If a farmer of fifty acres has (as he should have) use for a good corn-sheller and one of the many improved fanning-mills, and he has not already obtained both, *Why don't he do it?*

And if it is cheaper, actually cheaper, to burn dry wood than green, and to use a stove instead of an open fireplace, *Why don't he do it?*

Farmer's Gazette.

ITEMS IN DOMESTIC AND RURAL ECONOMY.

To prevent horses, which are disposed to break their bridles, from doing so, place a pad within the strap that passes back of the head, the inside of which is lined with cotton or linen, and in which the points of three or four sharp nails pointing inward, are concealed. When the horse draws hard upon the bridle, these prick him, and cause him to desist.

Cracks in stoves and stove pipes are readily closed by a paste made of ashes and salt with water.

Nails are prevented from rusting by heating them, and dropping them while hot in oil.

Gates, work much better for having the hinges and latches greased. To keep them so bore a hole, and plug up a quantity of grease in the gate post, where it may always be at hand when wanted.

Ice, on doorsteps, may be easily removed by throwing salt upon it, which will cause the ice to crack to pieces.

Cattle should be duly supplied with salt during winter, which is often forgotten.

Hay and oats may be economized by feeding horses on ruta bagas, which they soon learn to eat.

An excellent and cheap paint for rough wood work, is made of six pounds of melted pitch, one pint linseed oil, and one pound of brick dust, or yellow ochre.

Stumps in fields are made to rot, by placing earth upon them. Genesee Farmer.

RED BEET PIES.

The red beet generally appears on our table in an acid and cold form, as a pickle only; whereas if our female friends would take the matter in hand, we doubt not that it may be prepared in a variety of ways; superior to any garden production which we possess—as it is abundantly and easily cultivated, and kept in a state of perfect freshness during the whole year. By a recent trial it has been found that pies may be made of it, which are equal if not superior to rhubarb. Either from the leaves, the same as rhubarb, or from the root, by cutting it into square pieces—vinegar and sugar, "and other spices if liked," can be added to suit any palate, while it possesses the advantage of furnishing us with a delicate and beautiful pie, and which can grace our tables at any season of the year. Farmer's Gazette.

HAMS.

It is well known that Westphalia hams are held in higher repute than any others. This excellence is said to be owing, not to anything particular in the pork, but to the manner of curing the hams. They are smoked in the upper stories of their buildings, and the smoke, which is from oak or maple chips, is conveyed by means of tubes, from the cellar of the building. Thus passing through the long space, the vapor which smoke generally holds, is deposited, and the hams are perfectly dry and cool during the process. The great defects in smoking commonly are, the meat is placed too near the fire, and the smoke-house is too tight; it is, therefore, in consequence, kept too warm by the fire, and the condensation of the vapor keeps them damp.

MARCH OF INTELLECT.

A GREAT deal is said and written now-a-days about the "march of intellect;" the "intelligence of the age;" the "schoolmaster abroad," and a variety of other expressions indicative of the vast superiority of the present generation, to those that have passed away. When compared with us, our fathers are made to appear like fools; and many a simpering miss, as she sighs and wipes a tear from her pretty cheek with the perfumed corner of an embroidered handkerchief, while reading a *fashionable* novel of the day, wonders how her "dear grandmamma could live, without having such beautiful stories about the sweet young gentlemen, and charming, delectable heroes and heroines, to read about!" March of intellect, indeed! rather say, the *April* of intellect, for there are *fools* enough in all conscience among those who belong to the vast battalion that are progressing in this "march of intellect."

That general intelligence is rapidly increasing, and expanding and elevating the intellect of the million, there can be no doubt in the mind of the most superficial observer of the progress of society, and we rejoice that it is so; but we seriously question the tenability of the position, that we are vastly wiser than our grandfathers. True, they had no penny papers, no "dog cheap" periodicals, and equally cheap lectures, to disseminate general knowledge and *theoretical* science among them; yet, for vigor of intellect, strengthened with knowledge of the practical and utile kind, they present models after which it would be well for the superficial philosophers, and political economists of our day to pattern. They obtained knowledge by observation, and learned science and jurisprudence in the great school of experience; and hence, the metal they obtained from the crucible of patient labor and untiring perseverance, was free from the alloy of the bookmaking scrivener, who too often throws the dust of false theory into the eyes of his admirers, while he fills his pockets from their purses.

It is said that knowledge is *cheaply* obtained at the present day. Ay, so it is; and we fear, vastly too *cheap* to be *good*. A great deal of it is like Peter Pindar's razors, "made to *sell*;" and whoever buys it for a genuiue magnum bonum, will most assuredly get *badly shaved*. Everybody *reads*, but how few there are who *study*. Everybody has a smattering of science, of all kinds, but how few there are that can analyze by a train of reasoning or experiments, the mysteries of true philosophy, or the chymical ingredients of the simplest of nature's compounds. Yet we find every long-haired (and we may say, *long eared*) dandy, disputing with the learned professor about the abstract principles of science! when the only science that he really understands, is the science of *twaddleology*. And seminaries of learning, for females, are, by the wonderful march of intellect, made into vast Pierean springs, whence knowledge of every kind may be had in profuse and spontaneous draughts, with but little effort of intellect. Pope's saw and caution,

> "A little learning is a dangerous thing;
> Drink deep, or taste not the Pierian spring,
> For shallow draughts, intoxicate the brain," &c.,

are perfect nonsense—entirely obsolete. There is now no such thing as taking "shallow draughts," for the least sip fills the capacious cerebrum, and the child of yesterday becomes the grave philosopher to-day.

Look at the list of accomplishments promised to be taught to a miss, just entered her teens, during a single term in one of these *fashionable* seminaries of —— shall we say learning? nay, folly. The whole round of science and philosophy, from the analysis of a vegetable pill to the demonstration of the mightiest problems in astronomy—every kind of language but the language of common sense—painting, music, embroidery, and all other fine arts except the art of domestic economy, with a "smart sprinkling" of other minor acquirements, such as reading and writing intelligibly, et cetera, are taught. Why, such old fools as Bacon, Locke, Linnæus, Newton, Franklin and Herschell, considered the mastery of such a vast amount of varied learning, to be the work of a long life; and yet a miss of fourteen is promised to be taught the whole "thoroughly" before she attains to a proper marriageable age! Ditto with the education of males.

And what must be the effect of all this folly? It seems to us to be clearly this: to weigh down otherwise strong and vigorous intellects, with a mass of useless lumber—to destroy energies which might be successfully employed in the pursuit of fewer but more useful attainments—and to fill society with disgusting pedants. Philosophers—statesmen—mothers of future Washingtons—the men who are to guide the helm of state and add glory and renown to our Republic, in learning, science, and art, are moulded by this defective system of education, for their respective high destinies. How will they mourn over the time wasted in the pursuit of those studies that were ill-befitting their genius and nature, to the hinderance of their advancement in pursuits congenial to their feelings and abilities, and useful for the part they have to perform. We would not be understood as condemning any of these acquirements and accomplishments, when taught properly, in the proper time, place, and manner. But the systems of crowding all at once upon the attention of the child, and without any distinction as to strength of physical and mental abilities, we do condemn as cruel and absurd.

This generation, great as it may appear in improvements, will never be distinguished for its truly great men—men who, by dint of study and research, will develop new principles in science, and establish them upon the firm basis of truth. Rapid movements are made in the "march of intellect" and science, but these movements are but improvements upon the suggestions of our foolish fathers. We shall be distinguished as the great *improvers*, not the *inventors* of systems of philosophy or morals for the benefit of society at present, and for posterity. The only science which we have fully developed, is the science of *humbug*. All men begin to understand it, and society is divided into two great classes, the *humbugs* and the *humbugged*. This science is fixed upon a firm foundation—the broad one of that remarkable truism, that, "when the sky falls, we shall catch larks."

Some perhaps will call us cynic, croaker, and other hard names, for advancing such doctrine, and tell us that "he who spits against the wind spits in his own face." We can only say, that we sincerely believe that we are right; and we as sincerely believe that the wind will change by-and-by. We believe our system of education is radically wrong; and had we time and space, we are foolish enough to suppose that we might convince some of the less obtuse, that in this defective system, especially in the education of females, lies the great secret of so much domestic and conjugal unhappiness, now so alarmingly prevalent throughout our land; and the downward tendency of the morals of our young men in cities, who keep aloof from the court of Hymen, for fear of being chained for life to a "help-*eat*" instead of a help-*meet*." We appeal to the sensible—to those who are not in the ranks of the many who are on this boasted rapid "march," whether we are right or wrong. Waiting their decision, we will dismiss the subject, *sine die*.

EFFECT OF WINDS UPON THE ATMOSPHERE.

The following laws have been deduced from extended experiments by Kamtz and Dove:—

1. The barometer falls under the influence of the east, southeast, and south winds; the descent changes to ascent by the southwest wind; rises by the west, northwest, and north winds; the ascent changes to descent by the northeast winds. This law is deduced from observations, made at Paris four times a day, at first for five years, then for ten years, 1816–'25.

2. The thermometer rises by the east, southeast, and south winds; the ascent changes to descent by the southwest wind; falls by the west, northwest, and north; the descent changes to ascent by the northeast wind. This and the following are believed to be based upon observations made at Paris and London, and having been confirmed by observations of Kamtz himself during four years.

3. The elasticity of aqueous vapor is increased by the east, southeast, and south winds; its increase changes to decrease by the southwest wind; it decreases by the west, northeast, and north winds, and its decrease changes to increase by the northeast wind.

4. The humidity of the atmosphere decreases, relatively from the west winds passing by the north to the east, and increases, on the contrary, from the east by the south to the west.

Athenæum.

THE DYACKS OF BORNEO.

That portion of their creed which obtains the greatest influence over their mode of life, arises from a supposition which they entertain that the owner of every human head they can procure will serve them in the next world. The system of human sacrifice is, upon this account, carried to so great an extent, that it totally surpasses that which is practised by the Battas of Sumatra, or, I believe, by any people yet known. A man cannot marry until he has procured a human head; and he who is in possession of several may be distinguished by his proud and lofty bearing; for the greater number of heads which a man has obtained, the greater will be his rank in the next world; and this opinion naturally induces his associates to consider him entitled to superior consideration upon earth. A man of consequence cannot be buried until a human head has been procured by his friends; and at the conclusion of peace between two tribes, the chief of each presents a prisoner to the other to be sacrificed on the spot. The loss of human life occasioned by these latter-named ceremonies falls far short of that which is produced by the necessity of obtaining a human head to grace the marriage rites, a necessity which tends so strongly to check the increase of population, that, had the lawgiver who introduced it apprehended that the island would speedily become too thickly inhabited, he could not have hit upon a more efficacious mode of prevention.

HAZARDOUS ENTERPRISE.

A little more than a century ago England was indebted to Italy for the greater portion of her thrown silk. The superiority of the Italians over the English in the art of silk-throwing was held by the former of so great value, that the penalty of death was prescribed by their laws against any one who should make known to a foreigner the secret of their manufactories. In this state of things a Mr. John Lombe, the youngest of three brothers of that name, engaged

in the silk-trade, proceeded to Leghorn in the year 1715, upon the hazardous enterprise of endeavoring to possess himself of a knowledge of the silk machinery of that country.

On his arrival, and before he became known in that country, he went, accompanied by a friend, to see the Italian silk-works. This was permitted under very rigid limitations; no person was admitted except when the machinery was in action, and even then he was hurried through the rooms with the most jealous precaution. The celerity of the machinery rendered it impossible for Mr. Lombe to comprehend all the dependancies and first springs of so extensive and complicated a work. He went with different persons in various habits—as a gentleman, a priest, or a lady; and he was very generous with his money; but he could never find an opportunity of seeing the machinery put in motion, or of giving to it that careful attention, which his object required.

Despairing of obtaining adequate information from such cursory inspection as he was thus enabled to give, he bethought himself of associating with the clergy, and being a man of letters, he succeeded in ingratiating himself with the priest who confessed the family to which the works belonged. He seems to have opened his plans, partly at least, to this person, and it is certain that he found means to obtain his co-operation. According to the scheme which they planned between them, Mr. Lombe disguised himself as a youth in want of employment. The priest then introduced him to the directors of the works, and gave him a good character for honesty and diligence, and described him as inured to greater hardships than might be expected from his appearance. He was accordingly engaged as a filatoe-boy, to superintend a spinning-engine so called. His mean appearance procured him accommodation in the place which his design made the most acceptable to him—the mill. While others slept he was awake and diligently employed in his arduous and dangerous undertaking. He had possessed himself of a dark lantern, tinder-box, wax-candle, and a case of mathematical instruments. In the daytime, these were secreted in the hole under the stairs where he used to sleep; and no person ever indicated the least curiosity to ascertain the extent of the possessions of so mean a lad. He thus went on making drawings of every part of this very grand and useful machinery; the priest often inquired after his poor boy at the works, and through his agency Lombe conveyed his drawings to Glover Unwins; with them models were made from the drawings, and despatched to England piecemeal in bales of silk. These originals are still, we believe, preserved in the Derby mills.

After Lombe had completed his design he still remained at the mill, waiting until an English ship should be on the point of sailing for England. When this happened, he left the works and hastened on board. But meanwhile his absence had occasioned suspicion, and an Italian brig was despatched in pursuit; but the English vessel happily proved the better sailer of the two, and escaped. It is said that the priest was put to the torture; but the correspondent of the Gentleman's Magazine, to whom we are indebted for most of the facts we have stated, says that, after Mr. Lombe's return to England, an Italian priest was much in his company; and he is of opinion that this was either the priest in question, or, at least, another confederate in the same affair. Mr. Lombe also brought over with him two natives accustomed to the manufacture for the sake of introducing which he had incurred so much hazard.

After his return, John Lombe appears to have actively exerted himself in forwarding the work undertaken by him and his brother, Sir Thomas, at Derby; but he did not live to witness their completion. He died on the premises, on the 16th of November 1722 in the 29th year of his age. The common account of his death is, that the Italians, exasperated at the injury done to their trade, sent over to England an artful woman, who associated with the parties in the character of a friend; and having gained over one of the natives who originally accompanied Mr. Lombe, administered a poison to him of which he ultimately died.

ADVICE TO LADIES

The happiness of females—consequently, by a regular gradation, the happiness of the world—depends much upon women. Women, ought, therefore, to consider this life as a short passage to another, which is both permanent, happy, and glorious.

Let your husband be the partner of your joy, and be you the sharer of his troubles. Consult him, and confide in him. Upon all occasions do him honor. Treat him with kindness and tenderness. By softened dignity, united with delicacy, endeavor to keep alive in his breast a pure, a fervent affection; and use the power which this conduct will give you over his heart, to draw him to the sense and practice of that duty, which will not only render indissoluble, but will likewise perpetuate your union through ages of increasing bliss.

To your children, to your friends, to your servants, to your neighbors, to the world, be affectionate—be faithful—be kind—be useful—be exemplary. Then shall you please him whose pleasure is life—then shall you be happy, here and for ever.

PLEASURE.

"Pleasure is to woman what the sun is to the flower; if moderately enjoyed, it beautifies, it refreshes, and it improves; if immoderately, it withers, desolates, and destroys. But the duties of domestic life, exercised as they must be in retirement, and calling forth all the sensibilities of the female, are perhaps as necessary to the full development of her charms, as the shade and the shower are to the rose, confirming its beauty and increasing its fragrance."

THE HUDSON.

Proud stream! the birchen barks that wont of old
From cove to cove to shoot athwart thy tide,
The quivered nations, eloquent and bold,
Whose simple fare thy shores and depths supplied,
Are passed away; and men of other mould
Now o'er thy bosom their winged fabrics guide:
All white with sails thy keel-thronged waters flee,
Through one rich lapse of plenty to the sea.

Beauty and Majesty on either hand
Have shored thy waters with their common realm,
Here pasture, grove, and harvest-field, expand,
There, the rough boatman veers his yielding helm
From the sheer cliff, whose shadow broad and grand
Darkens his sail, and seems his path to whelm
With doubt and gloom; till, through some wild ravine,
A gush of sunlight leaps upon the scene!

I love thy tempests, when the broad-winged blast
Rouses thy billows with his battle-call,
When gathering clouds, in phalanx black and vast,
Like armed shadows gird thy rocky wall,
And from their leaguering legions thick and fast
The galling hail-shot in fierce volleys fall,
While quick, from cloud to cloud, darts o'er the levin
The flash that fires the batteries of heaven!

How beauteous art thou, when, at rosy dawn,
Up from thy glittering breast its robe of mist
Into the azure depths is gently drawn,
Or softly settles o'er thy bluffs, just kissed
By the first slanting beams of golden morn;
Gorgeous—when ruby, gold, and amethyst,
Upon thy tasselated surface lie—
The wave-glassed splendors of the sunset sky!

And when the moon, through wreaths of curdled snow,
Upon thee pours a flood of silver sheen,
While the tall headlands vaster seem to grow,
As on thy breast their giant shadows lean,
There is a mournful music in thy flow;
And I have listened 'mid the hallowed scene,
Until loved voices seemed, in murmurs bland,
Hailing me softly from the spirit-land.

The deep Missouri hath a fiercer song,
The Mississippi pours a bolder wave,
And, with a deaf'ning crash, the torrent strong,
From the linked lakes, leaps to Niagara's grave;
Yet, when the storm-king smites his thundering gong,
Thy hills reply from many a bellowing cave;
And when with smiles the sun o'erlooks their brow,
He sees no stream more beautiful than thou.

THE WREN.—Rev. W. F. Faber.

There is a bay all still and lone,
And in the shade one broad gray stone;
Where at the evening hour
The sun upon the water weaves
Motions of light among the leaves
Of a low hanging bower.

And one old sycamore, that dips
Into the stream its dark green tips,
And drinks all day and night;
And, opposite, the mountain high
Doth intercept the deep blue sky,
And shuts it out from sight.

Last year it was my haunted seat,
And every evening did I meet
A grave and solemn wren:
He sate, and never spoke a word;
A holy and religious bird
He seemed unto me then.

I thought, perchance, that sin and strife
Might in a winged creature's life
Be somehow strangely blent:
So hermit-like he lived apart,
And might be, in his little heart,
A woodland penitent.

Deceitful thing! into the brook,
Hour after hour, a steadfast look
From off his perch was sent;
And yet I thought his eyes too bright—
Too happy for an anchorite,
On lonely penance bent.

Ah, yes! for long his nest hath been
Behind yon alder's leafy screen,
By Rothey's shining waters;
Two rapid years are run, and now
This monk hath peopled every bough
With little sons and daughters.

I will not blame thee, Friar Wren—
Because among stout-hearted men
Some truant monks there be;
And, if you could their names collect,
I rather more than half suspect
That I should not be free.

Erewhile I dreamed of cloistered cells,
Of gloomy courts and matin-bells,
And painted windows rare:
But common life's less real gleams
Shone warm on my monastic dreams,
And melted them to air.

My captive heart is altered new;
And, had I but one little bough
Of thy green alder-tree,
I would not live too long alone,
Or languish there for want of one
To share the nest with me.

SONG IN SPRING.

The Spring hath many garments,
And puts gay colors on,
And pearls of dewy morning
She gathers for the sun;
And decked with many flowers,
She dances with the hours.

And gentle winds attend her
From many a summer sea;
They come with odors laden,
And gush of melody;
In forests couched with roses,
Her gladsome form reposes.

And when the sun no longer
Is shining from the west,
She warbles in the twilight,
And lulls him to his rest;
And with the lingering hours,
She shuts the drooping flowers.

Oh! gentle Spring, I love thee—
Thy pleasant dews and airs,
The sweetness of thy countenance
When winter disappears:
The bird that with thee singest,
And the early bud thou bringest.

MISCELLANY.

AN EASY METHOD OF GIVING GREATER STRENGTH AND FIRMNESS TO THREAD, NETWORK, CORDAGE, AND COARSE CLOTH.

The lixivium of oak bark has scarcely been employed for any other purpose than that of the tanner, and yet it is applicable to a great variety of uses. If thread, cords, nets, coarse linen, &c., be steeped in it, they acquire greater firmness and durability. Fishermen have long resorted to this. Nothing is more apt to spoil than skins, and yet this preserves them. It is the same with hempen and linen cloth. They contain much gummy and resinous matter, which with tannin forms an envelope and thus adds to their durability. Linen ought not to steep more than eight or ten days in this solution: it acquires a very brown color. When this color fades, the operation may be repeated.

The best method of preserving nets and cordage is the following: dissolve two pounds of Flemish glue in fifteen gallons of water—dip the nets, &c., in this solution and then steep them in a strong solution of oak or chestnut bark—the tannin combines with the gelatin, and forms, between the fibres of the hemp, a solid network which adds great strength to the cords. Any bark which contains tannin may be employed in making a decoction; so bones, parings of skins, remains of fish, &c., and generally all substances containing gelatin may be used in making a gelatinous solution. Fishermen who often throw away on the shore gelatin fish, may use them for this purpose.

THE ENGLISH AND AMERICAN NEWSPAPER PRESS.

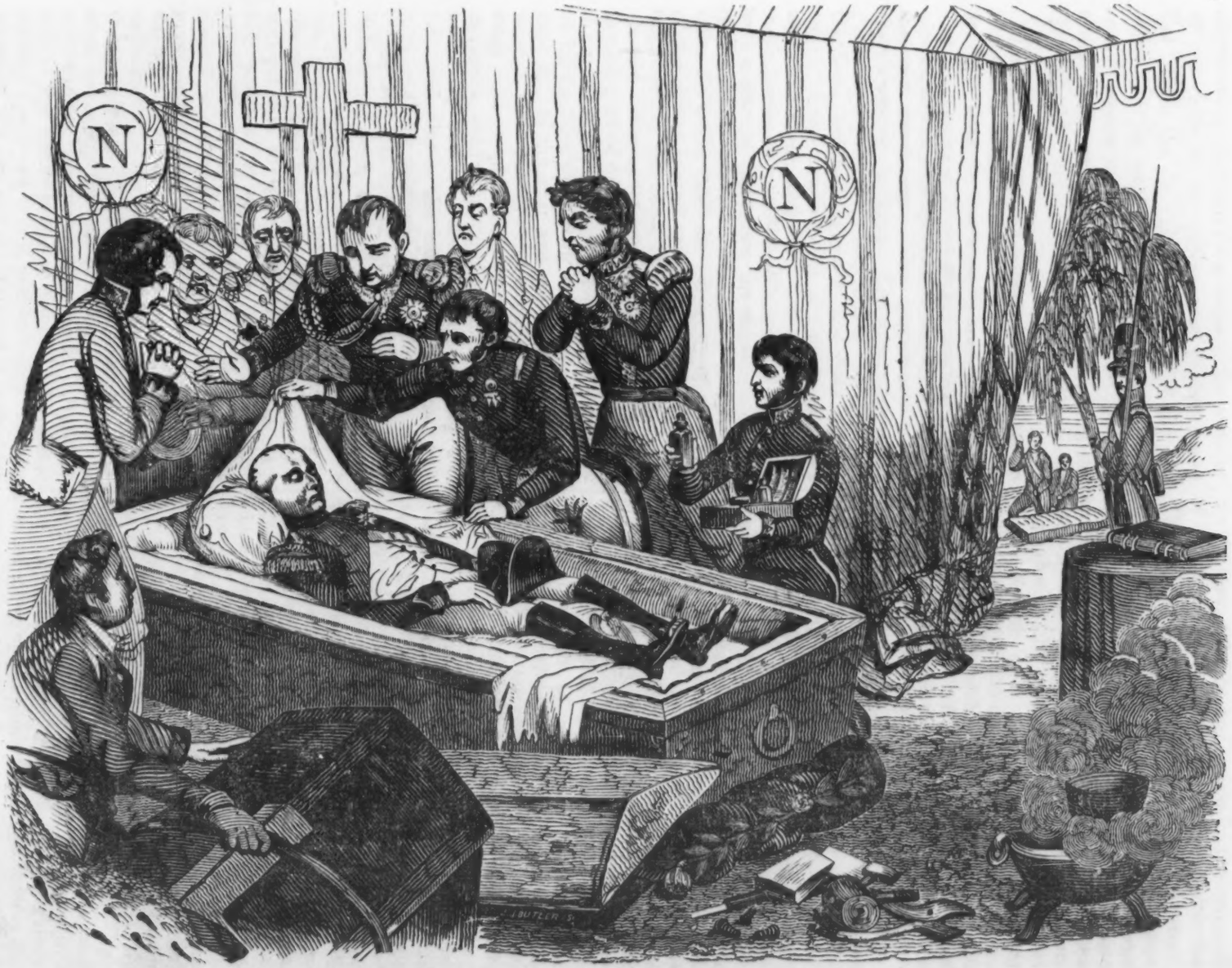
An Englishman takes the Times, or the Post, because his father took it before him, and he sticks to it at fifty, because he read it at thirty. That particular paper is as much a habit as his hour of dining, and he would as soon think of changing the one as the other. News would not look so authentic to him in another type, or on paper of another shape and texture, and the arrangement of the contents, the politics of the editor, the tone on religion, the morals, and scandal, are all subjects of a confirmed habit, and as little liable to change as his taste for beef and ale. This being the character of a great majority of the readers of a London paper, the proprietors are interested, of course, in preserving its peculiar stamp—political, literary, moral, and typographical; and the Post, Chronicle, and Times, are essentially the same to-day that they were at the close of the last century, and will be at the close of the present. This conservative tenacity of patronage renders it difficult to establish a newspaper, as it is not undertaken except by very responsible men who continue to invest in it the capital with which they began, and consequently have a very heavy stake in its good management and character. "The Times," for example, is worth half a dozen large fortunes, and its revenue would pay the whole American cabinet. It has an editor at each department, who holds his place at the control of the stockholders, and, beside a correspondent in every quarter of the globe, it employs hundreds of purveyors, of news contributors and reporters—all nameless, and, of course, all valued solely by the quality of their contributions. To procure an interview with "the editor," is a matter of as much difficulty and delay, as to speak to her majesty, or Lord Melbourne. Indeed, the editor is a much more powerful person than either Victoria or the premier.

Jonathan's pot, on the contrary, is for ever boiling, and every bubble breaks as it rises. He buys in the newest shop, he runs after the newest parsons, he crowds the new hotel and the new steamer, swallows the new fashion without smelling or tasting, makes money if his shop burns down, and "sweetens his treacle" by demanding yearly a *new news*-paper. His daughters have relays of courtship, his sons have an ever-renewing variety of drinks, his servants change their places every moon, and he himself changes his home and his visiting circle regularly with the birds in May. If chance makes Jonathan idle and rich, he travels for change; if chance makes him idle and a fixture, he frequents hotels and taverns. Change and experiment form, with nationality and love of money, the four cardinal points of Jonathan's horizon.

HEAT.

A writer in the N. Y. Journal of Commerce has favored the public with some very good suggestions relative to heat. He remarks that as heat radiates in straight lines, grates and stoves should be set on a level with the floor to keep the feet warm. This is generally understood, but not extensively practised in New England, either because stoves necessarily stand partly over the floor or because it is fancied that the fire looks better to be suspended between the floor and the ceiling, and it would be perfect heterodoxy in the creed of fashion, to sacrifice looks to comfort. Jambs, if black or dark colored, do not reflect, but absorb heat, but light colored ones, at a proper angle, reflect it. Moderate heat is favorable to putrefaction; hence, meat put into cold water and brought slowly to boil, will become tainted. On the other hand meat slightly tainted if put in boiling water in an open vessel, and kept boiling till it is cooked, will be found to be sweet. Putrefaction also affects water that is kept a long time warm but not boiling. Hence, the writer doubts the benefit of having water on close stoves to correct the unpleasant quality of the air. A *dry* air is never unwholesome, while a damp one, is always fraught with disease. The atmosphere in a room heated with a close stove, can be much better corrected by a valve at the top of a window, which would produce a circulation of air, the want of which, and not of moisture, occasions the close, uncomfortable sensation of which people complain.

One might as well go to law without a witness, as break a jest without laughter on one's side.



THE EMPEROR NAPOLEON IN HIS COFFIN, AS HE APPEARED AT ST. HELENA, AFTER HAVING BEEN DISINTERRED IN THE PRESENCE OF HIS GENERALS &c.

NAPOLEON.

In the February number of the Magazine, we gave a brief description of the disinterment of Napoleon, and the funeral ceremonies at Paris. We are now enabled to present an engraving, representing the interesting scene of the opening of the coffin in the presence of Bertrand and Las Cassas the old and tried friends of the emperor, and the other members of the expedition, sent to convey the body to France. We subjoin a description of the last funeral services in the church.

The church, to which persons had been admitted by tickets, had been filled since eleven o'clock, at which time the first cannon fired, announcing that the remains of Napoleon had touched French ground, and thrilled like an electric shock through the vast assemblage. The appearance of the church was very striking. The great altar, which generally separates the long line of the nave from the dome, had been removed, and from the entrance to the extremity of the dome the view was an uninterrupted one. The space under the dome, arranged as a *chappelle ardente*, was filled with a blaze of light from the thousands and ten thousands of wax lights that hung in lustres or lined the walls, until the extremity of this part of the chapel looked one great wall of fire. In the centre of the choir, in front of the altar, was erected the splendid *catafalque*, a representation in gilded wood of the tomb that is to be erected in marble, supported by four pillars, and surmounted by a golden eagle with outspread wings. On each side of the altar and around the *catafalque* were tribunes and benches; in one of the tribunes, hung with purple cloth, were the king and his ministers, and in the other the infanta of Spain; and every corner of the immense building was full, from nine in the morning till half-past five, in spite of the cold, which was intense.

The cold was indeed bitter for those to whom tickets had been allotted for the tribunes that occupied each side of the avenue leading up to the esplanade of the invalides from the quay to the great gate; but the crowd bore the biting frost with patience, for it was decidedly one of the very best positions for seeing the funeral procession pass. The stands were already filled by eleven o'clock, and it was not until two o'clock that the procession reached the quay. Never was sight, during this interval of three mortal hours, less appropriate to the occasion than the spectacle then presented. The intense cold rendered movement necessary for fear of being frozen to the spot, and to keep themselves warm, the spectators in the stands began to dance. The mania reached the crowd below, and for a long time the troops of the line and the National Guards were joining in one general *contredance*, or an enormous *ronde a la main*. This preliminary *orgie*, while waiting for the body of the great hero of their nation, and in the face of the long line of statues of their greatest warriors, seemed peculiarly inconsistent. Along the nave the archways, both below and above, had been filled with tribunes for spectators, and were decorated with black velvet draperies, studded with the different Napoleonic emblems. Not the least imposing part of this imposing spectacle, was the crowd, in mourning dresses that filled the chapel, first along the archways in the nave, then in the tribunes of the dome as they became crowded with the representatives of the different bodies of the state, the ministers and staff, the marshals and superior officers of the army, and seemingly all that France still contained of brilliant in uniform or costume; and then the long vista of the nave as it became lined with the different deputations of the courts of justice, of the thousand and one departments of the French state mechanism, and at a later period with the officers, non-commissioned officers, soldiers, and sailors, who had formed a part of the procession. At one o'clock the cannon announced the departure of the king from the Tuilleries, and shortly after his majesty and his suite arrived at the Invalides. It was nearly two o'clock when a signal seemed to be given, and the archbishop of Paris, attended by other bishops, by his clergy, and an immense body of priests, of all variety of catholic pomp, advanced toward the nave; but it was only a false alarm, and they again retired. At this moment some alarm was felt lest the procession had been interrupted in its course: but these fears were speedily dissipated by the arrival of the car. The coffin was carried by the sailors of the *Belle Poule* frigate across the outer court to the entrance of the church. Here it was received by the archbishop, and his magnificent train of clergy having performed the rites of absolution, came up the nave of the church at the head of the funeral procession. Before the coffin walked the Prince de Joinville, who had accompanied the body to its final destination. To see the coffin borne along the nave was a spectacle that can never be adequately described. It was one of sentiment and not of show. As the coffin advanced, borne upon the shoulders of the thirty-two non-commissioned officers appointed for that purpose, accompanied at each end by General Bertrand and the marshals who occupied each corner, covered with the funeral pall, with the imperial crown reposing above, there was an evident thrill, an electric emotion, which pervaded the crowd that lined its passage. The old invalids, who occupied the first rank, were deeply moved, as he whom they had, for the most part obeyed with such fervor and enthusiasm in life, was borne along in death. But their emotion appeared to be one of pride and joy more than of grief. He was restored to them. The same sort of electric movement of feeling seemed to animate the mass of military men who lined one side of the dome as the coffin was slowly carried along up the steps that led to it from the nave.

This was decidedly the most striking and beautiful moment of the whole ceremony, the steps leading up to the choir lined on both sides with the military and the old invalids, so many of whom had fought under Napoleon; the whole of the aisle filled on both sides with troops, and all

down the centre of the steps and part of the aisle, the body of clergy standing in religious silence, awaiting the entrance of the *cortege;* the archbishop's attitude would have made a lovely picture—his eyes fixed on the cross, that was carried on high before him, and his hands joined in prayer, apparently heedless of the crowds around him, called one's thoughts from the pageantry of the scene to higher things. Most of the cures of Paris were also in the procession, and the appearance of so many of those good ministers of peace among the multitudes of military formed a beautiful and striking contrast. The drums rolled, the cannons shook the old walls of the Invalides, and then the muffled drums came slowly and solemnly up the aisle.

An interesting sight also was the arrival of the venerable old Marechal Moncey, who had long since expressed his ardent wish that he might live to see this day. He is in a very infirm state, and they say has been nursing himself with great care, to be able to encounter the fatigue of being present to receive the remains of his beloved master. He arrived in a chair on wheels, and was with great difficulty lifted up the steps into the choir. It was a curious incident in the beginning of the day to see the little bustling M. Thiers, strutting about in his cloak, and collecting a crowd round him, in the middle of the church, to hear him talk to M. Mole, as if he had been in a *salon*. The crowd augmented every moment, and on every side people whispered *voyez la cour autour de M. Thiers.*

Louis Philippe, surrounded by his great officers of state, stationed himself at the entrance of the dome to receive the body. There it was presented to him by the Prince de Joinville, who said: "Sire, I present to you the body of the Emperor Napoleon." The king replied, raising his voice: "I receive it in the name of France." General Athalin carried the sword of the emperor upon a cushion, and gave it to Marshal Soult, who presented it to the king. His majesty then addressed General Bertrand, and said: "General, I charge you to place this glorious sword of the emperor upon his coffin." This the general then did. His majesty next said, "General Gourgaud, place on the coffin the hat of the emperor." The general did so, and the king returned to his seat, passing by the left of the *catafalque* and bowing to the chamber of deputies.

In a few minutes after the *cortege* had entered the dome, the coffin was raised into the *catafalque* that occupied its centre, and the mortal remains of Napoleon reposed where his last wish was that they should repose—a wish which he thought in his dying moments to have been a vain one—in the heart of his own country—in the place worthy of France's greatest general, under the dome of the Invalides.

The mass then began. Mozart's *Requiem* was admirably performed. The voices of Lablache, Tamburini, Duprez, Marie, Grisi, Persiani, Dorus Gras, Stolz, Barcollet, and other celebrated singers, made the music tell magnificently. The Requiem of Mozart could not, probably, be better performed. At the conclusion of the mass, the sacred water was sprinkled upon the *catafalque* by the archbishop, and then handed to some of the marshals and older officers near, to go through the same rite, according to the observances of the catholic funeral services. It was long before the chapel was in any degree cleared. The crowd lingered still behind, and turned again and again to look at the *coup d'œil* of the burning wax-lights, the *chapelle ardente*, the illuminated *catafalque*, and the long vista of funeral pomp. But the church was at length emptied, the priests only remaining who were appointed to watch and pray over the corpse of Napoleon.

The king did not leave the Invalides until five o'clock. The royal *cortege* was composed of eighteen carriages, escorted by mounted national guards and chasseurs.

ALCHYMY.

Passing by the first dawn of alchymy, which evidently commenced at a very early period, we find the art formed into a regular code of knowledge, under the patronage of the Gothic king Alonzo. In the *Libro del Tesora*, written by that monarch, he states, with an appearance of great devotion and humility, that, although he had not wished for the philosopher's stone, yet the gift was bestowed upon him, that he might defend the kingdoms of his fathers. "In secrecy," he says, "I was instructed in this inestimable treasure, and therewith did I increase my wealth." It would have been fortunate if he could have employed this power in the season of distress; for letters are extant in which King Alonzo solicits alms; and at a prior period he actually pawned his crown-jewels to the governor of Morocco. The fancied treasure of Alonzo was guarded with much jealousy. A copy is extant in the royal library of Madrid, bound in boards of massy oak. The manuscript was locked with an iron lock, a circumstance whence it also obtained the name of the *Libro del Candado*. This precaution, however, seems to have been needless; for all the efficient lessons of the art were written in secret characters, so that the opening of the volume is of little service, even to the "good and wise," for whose profit Alonzo wishes to reserve the exposition of the secret, which he was also equally anxious to conceal from the profane. The cipher employed by Alonzo indicates the source of his knowledge. His alphabet appears to be a current Cuphic character, or rather that modification of the Cuphic which is still used by the occidental or Mauritanian Arabs, but the letters are varied by points and flourishes; they are probably not employed according to their original powers; and it appears from the table or key at the end of the Madrid manuscript that each letter of the Roman alphabet has ten or twelve corresponding signs in the secret character.*

* By the common consent of the ancient writers we are taught to consider Egypt as the parent-land of alchymical science. Perhaps some of the numerous symbols which the astronomer em-

In the thirteenth century, Albertus Magnus, Roger Bacon, and Raymond Lully, seem to have been the great stars of alchymy, which they raised to a degree of credit somewhat beyond its merits. The alchymists, however, still endeavored to veil the terms as well as the principles of their art under mystical characters. That the alchymist possessed a certain portion of useful knowledge cannot be doubted. Mr. Brande, who has ably traced the history of chymistry from its rude and empirical origin until the present era, says that the works ascribed to Geber, contain matter that well justifies the praise of Boerhaave, who considers him as a first-rate philosopher of his age. But the secrecy which the alchymists affected repelled improvement, and almost every discovery died with its inventor. Until the "triumphant chariot of antimony" rolled forth, and the bold but credulous physicians of the sixteenth and seventeenth centuries borrowed the powerful materia medica which they found in the laboratory, by which they discomfited the followers of Galen, the chymistry of Hermes had scarce produced any practical benefit in the higher pursuits of science, and the assistance which some of its preparations afforded to a few branches of the arts was accomplished rather by accident than by intention." Mr. Brande observes that "the transmutation of baser metals into gold and silver, which was the chief, and, in most cases, the only object of the genuine alchymists, was not merely regarded as possible, but believed to have been performed, by some of the more enlightened chymists of the seventeenth century; and in perusing the history of these transmutations as recorded by Helvetius, Boerhaave, Boyle, and other sober-minded men, it would be difficult to resist the evidence adduced without the aid of modern science. Lord Bacon's sound sense has been arraigned for his belief in alchymy, although he in fact rather urges the possibility than the probability of transmutation; and, considering the infant state of the experimental sciences, and of chymistry in particular, in his age, and the plausible exterior of the phenomena that the chymists were able to produce, he is rather to be considered as skeptical than credulous upon many of the points which he discusses. Some of the narratives of the effects of transmutation are indeed of a most extraordinary character. Helvetius positively affirms that he converted half an ounce of lead into pure gold, the materials for which were furnished him by an artist named Elias. The alchymist who arranged the process is said to have been absent when the experiment was made, which however succeeded so perfectly that the precious metal made from the lead was worth twenty-five florins.

Frederick III., emperor of Germany, is said to have caused a medal to be struck of the gold produced by an alchymical operation, which was performed in his presence by an alchymist of the name of Richterhausen. Frederick was so well satisfied with the result that he granted letters of nobility to the adept, and called him up among the barons of the Holy Roman Empire by the appropriate style of "Baron of Chaos." Such a fief was worth a fortune, and accordingly, wherever he went, the baron of Chaos met with capital success. At the court of the elector of Mayence he offered to effect a transmutation, for which purpose he produced a small portion of the matter of projection, in size and shape like a lentil. The powder had been mixed up with gum-tragacanth, for the purpose, as he said, of binding it, and then again the pellet was enveloped in wax. The elector was desired to put it, together with four ounces of quicksilver, in a crucible, which was afterward covered with charcoal. The elector and the baron of Chaos then blew the fire vigorously, and at the expiration of half an hour the crucible was taken from the furnace, and the baron poured out the molten gold. The liquid metal appeared of a bright red, and the baron exclaimed that its touch was too high—it must be lowered by the addition of silver. The elector threw in a bar of silver, and after a second fusion the metal was cast in an ingot. It was very pure, but rather brittle. The baron of Chaos easily accounted for this defect, as he said that "some particles of tin had probably adhered to the ingot mould, but a third fusion would remove the alloy." This was done at the mint, and the gold then became exceedingly ductile, and the mint-master told his serene highness that "he had never seen such fine gold, and that its touch was more than twenty-four carats." Monconnis tells the story in the words of the elector, and it is evident that both of them believed that a real transmutation had actually taken place.

Less fortunate than the baron of Chaos was an alchymist of the name of John Henry Muller, who originally practised as a barber in Alsace, his native province. The court of the emperor Rodolph, a munificent patron of the occult sciences, offered great temptations to adventurers of this description, and Muller's management of the emperor was so satisfactory that he obtained large presents. He was exalted into the caste of nobility, and his humble surname of Muller, or Miller, was judiciously expanded into the title of "Baron of Muhlenfels." After many adventures, the baron arrived at Stuttgard. Duke Frederick of Wirtemberg was as ardert an alchymist as the emperor, and the baron performed many transmutations with great success. The duke poured the metals into the crucible, the doors of the laboratory were locked and sealed, and on the following morning the amalgam of lead and mercury was found richly impregnated with gold. Another operation per-

ployed in common with the alchymist, if not truly Egyptian hieroglyphics, may at least be reminiscences or imitations of the sacred character. The signs denoting the seven planets are unquestionably of high antiquity, and figures resembling them, though they may not bear the same signification, are found on Egyptian monuments. Alchymical symbols are discovered in the sacred edifices of the middle ages; and their appearance need not excite surprise, notwithstanding the seeming incongruity of their position, as alchymy was then considered the most pure and holy art vouchsafed to man by the benignity of Providence. It was a favorite study of the clergy; and a numerous and venerable cohort of adepts might be assembled from the cloister and the cathedral. The consecrated walls and the storied window have displayed the symbols of the magistery and the elixir; and the blue lion and green lion, the red man and the white woman, the toad, the crow, the dragon, and the panther, all alchymical signs, were blended with the legends of the saints and martyrs.

formed in the castle of Reidlingen had the same result. It appears that the baron of Muhlenfels was enabled to effect the first transmutation by the help of a confederate concealed in a chest which was supposed to contain chymical apparatus; and at Reidlingen the same useful agent found his way through a vault. But the baron was not allowed to enjoy his credit in peace; for now the far-famed Sandivogius made his appearance at Stuttgard. He was really a Polish nobleman, and universally considered as the greatest alchymist and magician of the age. The two adepts were placed in a dramatic situation, which would be ludicrous enough were it not for the catastrophe. The baron of Muhlenfels was a credulous rogue, and, conscious that he was an impostor, he was dreadfully perplexed by the presence of a rival whom he verily believed to be a true master of the occult sciences. By insinuating to Sandivogius (whose conscience was probably not very clear, and who seems to have been equally apprehensive of coming in contact with any genuine sage) that the duke intended to put him to the torture for the purpose of obtaining the secret, the baron induced him to run away from Stuttgard. Muhlenfels then contrived to arrest the adept on his road, by virtue of a feigned order. Sandivogius was thrown into a dungeon by a village judge, and Muhlenfels took possession of his property, which was very considerable. The unlucky alchymist was nearly killed by the severities which the false brother inflicted upon him, in order to compel him to disclose the mysteries of the art; for, as we have observed before, Muhlenfels never doubted but that Sandivogius possessed the philosopher's stone. Sandivogious at length escaped from his prison, and accused the baron before the imperial tribunal; and Muhlenfels was found guilty of robbery, and condemned to die.

The old jurists had some difficulty in determining whether it was lawfully allowable to make money by alchymy. Baldus, a high authority among the civilians, gave his opinion that the practice was legal. Our common lawyers thought otherwise, and in the reign of Henry VI. an act was passed (according to Lord Coke it is the shortest in the statute-book) which ordains that "no one henceforth shall use to *multiply* gold or silver, nor the craft of multiplication." Boyle is said to have procured the repeal of the prohibitory enactment, on account of the impediments which it offered to the study of alchymy; but, by inspecting the petition upon which the act was founded, it appears that it was intended merely to repress the ingenuity of a most unphilosophical class of artists. The commons prayed that the practisers of the aforesaid art should, upon conviction, incur the punishment of felony; "because many persons, by color of this multiplication, make false money, to the great discredit of the king, and the injury of his people."

It might be thought that the number who had lost their all in this absurd and visionary pursuit would have induced more correct and scientific views. Yet alchymy stood its ground and flourished; and the adept, though a felon by act of parliament, worked in peace, with unchanged hope and unwearied earnestness. All the sad experience which he obtained could never suffice for his instruction. Retorts burst, and crucibles are shivered in the process—the alchymist's projection evaporates in smoke and fume; but the adept is not to be roused from his day-dream. Again he returns to the laboratory. He refills the alembic and the aludel; and the "Bath of Mary" is replenished anew. Salt, sulphur, and mercury, are blended in proportionate measure, and once more the parched disciple of Geber watches the concoction of the tincture and the menstruum, while he nourishes the slow reverberating flames of the furnace. His diligence abates not with increasing age. Years roll on. The colors of the liquid change; it reflects the azure line, which gradually softens into the play of the opal, and at length the iridescent teints concentrate into the gleam of the orient ruby. Breathless and feverish, he hails the appearances which the mystic sages of the east have taught him to consider as the tokens that the great work is fast approaching to its consummation. He rejoices, and expects that his toils are about to terminate and the elixir is in his power. But at the very moment of joy he discovers again that fate denies the boon: and the transmutation is as ineffectual as when, young in spirit and in years, he first read the perplexed allegories in which he has so long placed his trust.

While the alchymist was thus deceiving himself, and by his example tending to lure others into the same visionary track, he was in reality most materially benefiting the cause of chymical science. The furnace of the adept was nearly identical with that of the chymist in the present day. The retorts, crucibles, and other instruments for manipulating in connexion with the furnace were also similar in their character; and, though alchymists wanted the metal platinum for very high temperatures, their vessels must have possessed great power of resisting heat, as there are well-recorded instances of their enduring the action of fire for many years without intermission.

Brit. Cyc.

READING.

THERE are few enjoyments more rational, more congenial to the taste, or more subservient to the moral faculties of human intelligences, than the practice of wholesome reading. By it we may sit in our closet and hold converse with the patriarchs, sages, prophets, and poets, of hoary antiquity. We can partake of and imbibe the sentiments of the ancient fathers of science, philosophy, and religion; for the page of history, holds a secret but powerful language, full of meaning—full of knowledge and wise precepts, either portrayed in the beauties of virtue or the deformities of vice. While the idle, spiritless ignoramus, wanders on amid the glowing beauties

of the mental creation—a mere machine—propelled only by the propensities of his animal nature—trampling the loveliest flowers beneath his feet, nor appreciates the sweet perfumes exhaled by the mutilated plants; the enlightened reader, taught by the wisdom of that Creator whom he knows through the medium of his intellectual cultivation, sees in everything around him something to admire, something to charm him, and something to adore. He gathers from every hedge along the pathway of his existence, innumerable flowers, whose beauties garnish his tabernacle and whose perfume will ascend as grateful incense to heaven from the margin of the grave. The views, meditations and hopes of the former are circumscribed within the narrow limits of his own existence, and he looks back in the volume of past time no farther than the few brief chapters that have been recorded since his infancy; and in the future, his vision terminates at that point when the soul puts off its mortality. But the latter, fraught with the knowledge which books and concomitant meditation imports, views his own life as merely a faint speck within the area of his mental vision; and upon the wings of imagination he travels back to the matin of creation, when "the morning stars sang together, and the sons of God shouted for joy." He sits upon the apex of a great eminence, whence he beholds a panoramic view of the world, from the transactions in the garden to the present moment. In the political horizon, he observes the patriarchal power and petty sovereignties disappear at the approach of absolute and extended monarchy, and the whole earth governed by four great rulers. Again he sees these monarchies weakened by luxury and grown unwieldy by conquest, falling by their own weight, and out of their ruins smaller monarchies appearing. Following them, comes on a mighty power—the power of republics; and thus governed, Greece and Rome demand the homage of all nations. The latter swallows up the former, who, in her turn, becomes unwieldy and weak, and her Forum and her throne are filled with barbarian warriors. Thus he sees power after power alternately destroying and destroyed, and watches with intense interest the progress of events, which, operating upon each other in accordance with a great design, have produced the present political, social, and religious condition of the world. Thus too may the student watch the successive revolutions in the great empire of mind; and while he reads the histories of men and nations he may treasure up lessons of wisdom, upon which his country may make large draughts in the hour of peril.

While we would urge all to the practice of reading, we would warn all against the pursuit of an improper course, which, instead of proving salutary, may be greatly prejudicial to improvement. It is not so much the *quantity* as the *quality* of the matter perused, that makes a successful student; and the *manner* of arrangement is of the first importance. At the present day, when the prolific press is overflowing with every species of production, from the lascivious models of a Rochester, to the chaste and pious creations of a Chalmers or a More, it is very important for the reader to use the utmost care in his selections; for unprofitable reading is time *criminally* thrown away. Lenguet du Fresnoy, who was probably as great a reader as ever took a book in hand, has laid down a system of reading which comprehends all that is useful; and holds forth an object of encouragement to the disheartened student who looks with despair upon a library containing thirty thousand volumes, and knows not where or how to commence his labor of acquisition of knowledge.

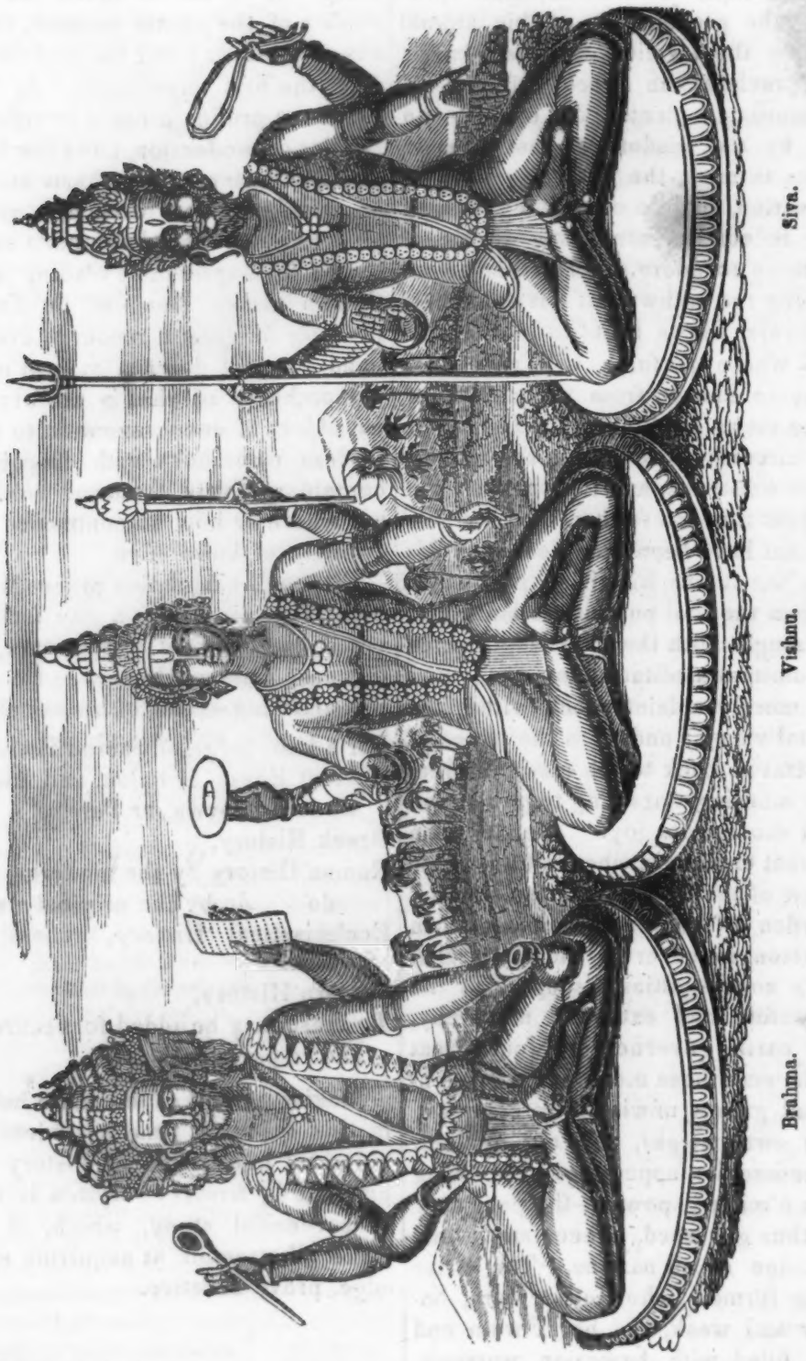
Fresnoy's calculation proceeds on the following plan: that six hours a day for the term of ten years, are sufficient to pass over, thoroughly, the immense field of history. He thus apportions this alarming extent of historical ground:—

For a knowledge of Sacred History,	3 months.
Ancient Egypt, Babylon, and Assyria,	
Modern Assyria, or Persia,	1 " "
Greek History,	6 " "
Roman History by the moderns,	7 " "
do do by the original writers,	6 " "
Ecclesiastical History, general and particular,	30 " "
Modern History,	24 " "
To these may be added for recurrence and re-perusals,	48 " "

Making a total of ten and a half years. Thus, in this space of time a student may acquire a universal knowledge of history and spend half his time in *leisure! System* is the great secret of successful study, which, if neglected, will make all attempts at acquiring extensive knowledge, prove abortive.

THE PRINCIPAL IDOLS OF THE HINDOOS.

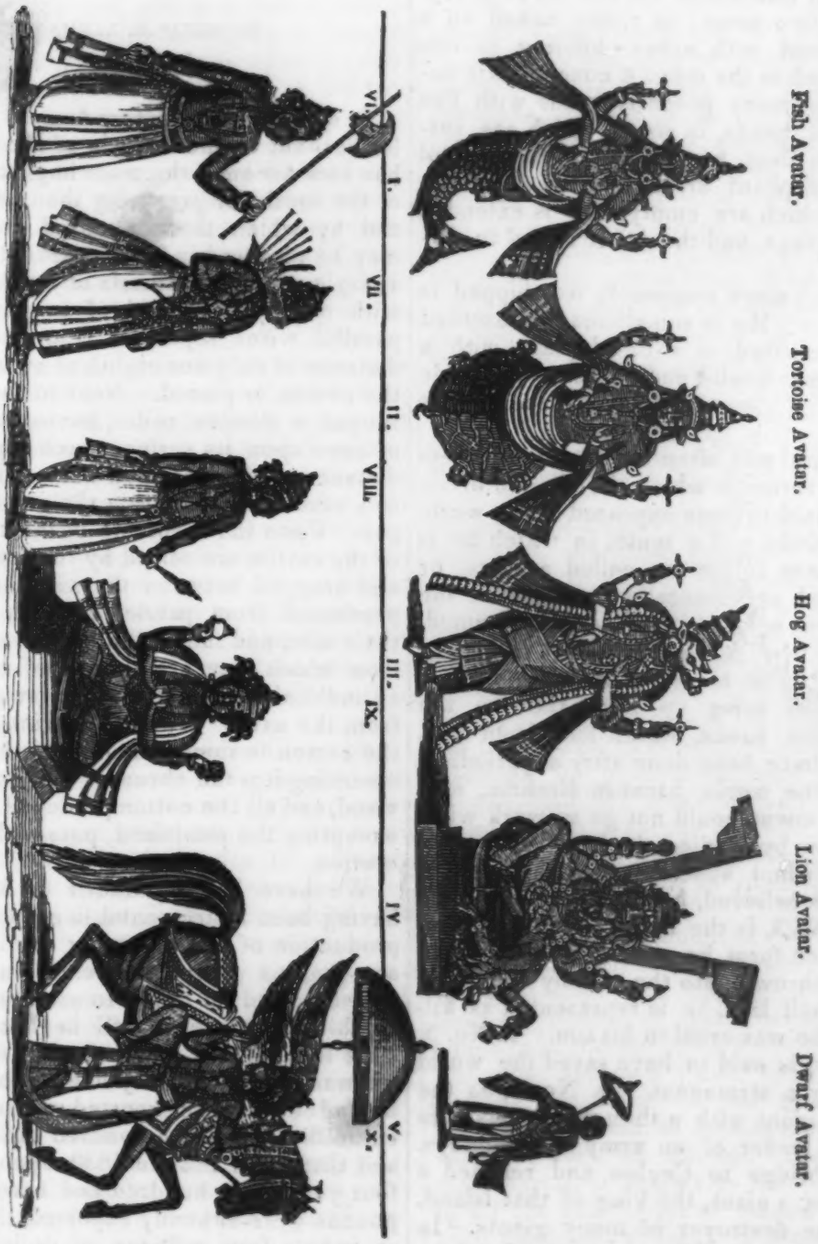
The Hindoos are taught that there is one supreme God; but beside this one idea, it may be doubted whether they have retained any part of the system of true religion which their ancestors derived from Noah. Their priests teach, that the supreme being created Brahma, Vishnu and Siva (pronounced Seevah), each of whom has his peculiar symbols, attributes, temples, and preposterous fables. It is not our wish to encourage the study of heathen mythology to any considerable extent, as we believe that it often injures the heart more than it benefits the head. We would also caution parents and teachers against allowing the young to devote much time to the demorali



zing fables of the Grecian and Roman divinities. Those heathen fonutains cannot give both sweet water and bitter.

The Hindoos believe that there are three hundred and thirty millions of gods, inferior to those abovenamed, on which we shall not waste our time. Some writers have thought that Brahma, the creator (as he is considered), Vishnu, the preserver, and Siva, the destroyer, are regarded as constituting the Deity; but such an idea has been recently declared, on most respectable authority, to have never entered into the conceptions of that people. Indeed it appears that the greatest inconsistency prevails among the opinions of their books and preachers with respect to almost every doctrine of their mythology; and from this source has arisen most of the uncertainty that has attended researches into the antiquities of Elephanta and other places. The state of the ancient figures appears to be, in many cases, more likely to mislead than the conflicting fables of those who pretend to learning.

Brahma, Vishnu, and Siva, are reported tohave visited the earth under a variety of forms, and for various, and commonly puerile purposes. In many cases, too, the objects for which they have undergone transformations, and submitted to prolonged and humiliating or painful labors, are of the most unworthy and vicious kind: such as would condemn any human being to contempt or ignominious punishment. If the biography of thieves and murderers is a dangerous study for youth, how much worse a mythology, which, like the Hindoo, the Roman, and the Grecian, details



THE TEN INCARNATIONS OF VISHNU.

crimes equally enormous, and even more degrading, and represents them as committed by the rulers and judges of the human race!

In Bengal, Brahma is usually seen, as in the engraving, with four faces and four arms: having in his hands a portion of the Veda or Hindoo Scripture, a spoon, a rosary, and a vessel containing the water of ablution.

Vishnu holds in one right hand a shell used for a trumpet, and in the other a sort of quoit, from which irresistible fire flames when it is whirled on his finger. In one of the left hands is a sort of club, and in the other a lotus-branch.

Siva has in one hand a trident, and in another a rope for binding incorrigible offenders. His other hands are open. He has a third eye in his forehead. Serpents form his ear-rings. His necklace is eomposed of human heads.

Mr. Winslow remarks, that "the Hindoos are divided into two leading sects, the Voishnuvus, or worshippers of Vishnu, and the Soivyus, or followers of Siva. Brahma has no temples, and no general worship, on account of being cursed by Parvutee, the wife of Siva, for telling a lie. The sect of Vishnu, who is worshipped principally under the forms assumed in the last three of his nine incarnations, is most numerous in Bengal, but is not without its adherents in the south of India. The Soivyus form, however, is the prevailing sect among the Tamul people, whether on the continent, or on this island. This sect regard Siva as superior to the other two divinities, and even affect to call him the supreme god, of whom, as an eternal spirit, their sacred books contain some intimations.

The people in general, whether learned or unlearned, regard Siva as the great object of adoration.

Siva is most usually represented as a man with one head, three eyes (the additional one being in

his forehead, on which also the half moon is represented), and two arms; as riding naked on a bull, and covered with ashes—holding in one hand a drum, and in the other a couch. His image is, however, more properly made with five heads, and eight hands, in six of which are severally, a scull, a deer, fire, an axe, a rosary, and the rod of an elephant driver; while of the remaining two, which are empty, one is extended to bestow blessings, and the other raised to forbid fear.

But the image more commonly worshipped is an indecent one. He is sometimes represented as a devotee, clothed in a tiger's skin, with a necklace of human sculls, and an alms dish made from the scull of one of Brahma's heads in his hand.

These unnatural and often hideous figures represent the nine forms in which the Hindoo divinity, Vishnu, is said to have appeared in the world at different periods, and a tenth, in which he is to appear. These forms are called avatars, or incarnations, and are generally named after the objects or persons whose appearances he assumed.

No. 1, called the fish avater, shows Vishnu as a fish, into which he transformed himself, as is said, in order to bring up from the sea the Vedas, or sacred books, which had been lost. This is said to have been done after a periodical dissolution of the world, because Brahma, who was to make it anew, could not go to work without learning how by reading the books.

In No. 2, Vishnu appears as a tortoise, in which form it is believed, he supported the earth on his back. No 3, is the hog avater, or Vishnu the hog, in which form he saved the world from sinking when thrown into the sea by a demon. In No. 4, as a half lion, he is represented as killing a father who was cruel to his son. In No. 5, as a dwarf, who is said to have saved the world from a giant by a stratagem. In No. 6, as the destroyer of a giant with a thousand heads. In No. 7, as the leader of an army of monkeys, which built a bridge to Ceylon, and rescued a woman stolen by a giant, the king of that island. In No. 8, as the destroyer of many giants. In No. 9, as the successful opponent of others by the stratagem of teaching them atheism; and in No. 10, as introducing the last, and golden age of the world.

THERE is no misfortune so great for a family of girls, as to be all beautiful and all unmarried at about the same time. They are sure to wane, perish, die of loneliness and ill-humor. If one half of them were as ugly as the devil, one just passable, and the remainder all unlike each other, with only one beauty, the whole might get married at last. So ladies, if any of you are marriageable, or not, my advice to you is plainly this—draw lots fairly and honorably, and blow up all your faces with powder, except one; but if that be too terrible, take the small-pox. It is your only chance. In a few years, too, you will be assuredly the more agreeable: you will have mind, in the wintry hour, when the personal beauty of woman is like the shadow that hath gone.

THE AMERICAN COTTON-TRADE.

BY JAMES H. LANMAN, ESQ.,

(Concluded.)

IT may not be uninteresting to give a particular account of the saw-gin of Mr. Whitney, as it has now become the most important instrument of the south for preparing that staple for market, and by which three hundred pounds of cotton may be cleansed in a day, through the agency of a single man. It consists of a receiver or hopper, with one side formed of a grating of strong parallel wires, separated from each other by the distance of only one eighth of an inch, into which the cotton is placed. Near to the hopper is arranged a wooden roller, having a circular series of saws upon its surface, each separated by the distance of about an inch and a half, and that pass to a certain depth within the grating of the hopper. Upon the revolving of the roller, the locks of the cotton are seized by the teeth of the saws and dragged between the wires, the seeds being prevented from passing through on account of their size, and fall to the bottom of the receiver, from which they are carried off by a spout. A cylindrical brush, revolving sweeps the cotton from the saws. By this instrument, the fibre of the cotton is somewhat injured, but the mode of cleansing it is the cheapest that has ever been devised, and all the cotton produced in this country, excepting the sea-island, passes through this operation.

We have before alluded to Mr. Whitney as having been instrumental in advancing the cotton production of the south, by the invention of the saw-gin, his genius thus enriching the southern planter; and in order to ascertain the amount of this advantage, it will be necessary only to state that in 1807, thirteen years after the cotton-gin was introduced, fifty-five millions of pounds of upland cotton were exported, whose value was eleven millions and five hundred thousand dollars; and that from 1827 to 1830, upon an average of four years, two hundred and seventy millions of pounds were annually exported, that were valued at twenty-four millions of dollars during each year; and that in 1833, the quantity exported was three hundred and thirteen millions five hundred and fifty-five thousand, six hundred and seventeen pounds, that were valued at about thirty-two millions of dollars. Yet, in the state of Georgia, which had received the first and most important benefit from his invention, he was excluded from all its advantages. Even in that state, the right to the invention was disputed, and in consequence he was obliged to resort to the judicial tribunals; but his suits failed, and before he was able to take advantage of a new patent law that had been enacted in part for his own benefit, thirteen years of his patent had expired. It is said that Judge Johnson, of South Carolina, who presided on that occasion, gave, in his charge to the jury, the most ample justice to Mr. Whitney as the original inventor of the cotton-gin. In 1812, Mr. Whitney applied to congress for a renewal of his patent, and a report was made

in his favor by a committee of the house of representatives; but the war which followed, and a combination of other circumstances, prevented the conclusive action of that body upon the subject, and Georgia had the full benefit of the machine without making the inventor any compensation for its use.

It may be proper here to give a brief account of the particular mode of the cultivation, which prevails in the different sections of the south. And, in the first place, we would take a brief view of the particular section where the sea-island cotton was first introduced. A long range of islands lies between St. Mary's, in Georgia, and Charleston, in South Carolina, originally crowned with the evergreens of the south, intermingled with live-oak, and whose soil is principally composed of a mixture of clams, oysters, and other shells, together with the aboriginal remains of the Indians who formerly occupied that point; and their shores were at an early period colonized by a body of English people, who cultivated the indigo upon the soil. Upon one of these islands, separated from the mainland by a salt marsh, the sea-island cotton was first produced, and the fact that this species of cotton requires the salt air, and was first cultivated in such positions, has probably originated the name.

The seed of the sea-island is entirely black, and is sometimes covered with a species of fur. Its cultivation is extended about forty-five miles from the seashore, and the quality of the shrub appears to diminish according to its distance from the ocean. The best kinds are produced upon the island of Edisto, John's, Wadmalan, and St. Helena, in South Carolina. It is sown in different modes; in long hills, in short hills, and shallow trenches, that extend the whole length of the ridge. The most approved method of raising this crop is found to be the sowing in short hills, or near holes the width of a hoe apart, when it requires the most careful labor in thinning, ploughing, and gathering the plant, which commences about the twentieth of August, and ends about the first of December. In the cotton lands of Mississippi, and the adjoining states, however, a different mode of culture prevails. In that section of the country which now yields by much the greater part of our cotton production, and where it is supposed that the land will more advantageously produce the crop when it has been previously cultivated one or two years for grain, it is customary to make the rows with the plough alone, and of only five or six feet, and upon the rich and low grounds seven or eight, a species of culture that is found to produce the most abundant harvests.

The extension of the cotton cultivation, from Georgia as a common centre, to the territory of the Carolinas, and westward to the shores of the Mississippi, introduced new and improved modes of tillage. It was soon found that the short-stapled cotton flourished in great abundance, especially between the waters of the Arkansas and Red rivers, where the soil was deeply tinged with red, and impregnated with a salt which produced the most beautiful species of this kind of crop. It is stated, indeed, by an enterprising cotton planter, that in this district a thousand pounds of seed cotton, or two hundred and fifty of Guinea wool, may be gathered with due industry; whereas, from the Mississippi to the Carolinas, especially in the hilly country, not more than five hundred pounds of the seed cotton can be produced. Yet, in all these districts, the system of agriculture is essentially the same. For the hand-hoe, which is used upon the seacoast, the plough is substituted in the interior, the latter instrument being cheaper and more effective in breaking up the soil; yet both are used in ridge husbandry. The seacoast of Georgia and Carolina, being much more exposed to the ocean winds that the interior, and the capsules of the sea-island being accustomed to expand more broadly than the short-staple, it is obvious that the former must be a much less certain crop.

The short-staple pods, indeed, are allowed to hang upon the plants until they are ripe with the wool, and they may, accordingly, be collected at two or three gatherings, while the sea-island requires ten or twelve, at a much greater cost of time and labor. Several varieties of the cotton grow bountifully from the southern borders of Virginia to the shores of the Mississippi, extending over a belt of about two hundred miles; and although its production does not exhaust the ground, still the size and swelling of its roots cause it to become too loose to sustain the plant, and accordingly the system of rotation of crops is beneficial in this as in other species of agriculture.

Of the actual amount of production, it is believed that eight acres, cultivated by the plough, will generally yield upon an average about one thousand pounds of cotton wool to each laborer employed; and ten cents a pound being, perhaps, the most common value, although, of course, varying according to the speculations of the market, one hundred dollars may be fixed as the value of such an amount. But this crop, like most others, is subject to the vicissitudes which, in all the enterprises of human labor, are apt to blast the hopes of man. The cotton is a delicate plant, and a strong wind or a heavy frost often visits the hopes of the cotton planter with disappointment; and the caterpillar, the bright, and noxious bugs, add their ravages to those of the elements.

When in a flourishing state, the cotton-fields of the south exhibit an appearance which, although peculiar, cannot fail to delight the lovers of natural scenery. The different colors which the pods and blossoms assume during the different stages of their vegetation, present a varied scene, which is beautiful in its general character, and of which the prominent features are waving groups of foliage, with blossoms of yellow, crimson, brown, and white, which hang from the vines, and intermingle the most brilliant hues with the green. These, however, are continually changing, according to the stage of the several crops, and the variations of the seasons, and during the time for gathering in the harvests, the peculiar

aspect of the negroes, with their baskets or bags collecting the valuable buds, display a spectacle that is singular in the impressions which it would be likely to produce upon those who are unaccustomed to such associations.

As regards the commercial character of the different species of American cottons, so variable in price, and also the matter of almost daily speculation, not only in this country but in Europe, we subjoin a statement of the several kinds that are imported into the British market, and for which we are indebted to the elaborate work of Dr. Ure, on the cotton manufacture.

AMERICAN COTTONS.

Georgia Sea-island.—This is raised on the sea-coast of Georgia, and the small islands which form the neighboring archipelago. Though not decidedly yellow, it has somewhat of a dull butter teint, which distinguishes it from white cotton. It is remarkable for its long staple, the filaments being three times longer than those of the Indian cotton wool. It has a silky softness. It is sometimes dirty, but the well-cleaned and the best is preferred to every other quality for spinning fine yarn; and indeed, it is indispensable for the finest. The reason of this superiority appears to be the cylindrico-spiral form, and equability of its filaments, which facilitates their torsion into a uniform thread.

Georgia Upland.—This cotton grows in the interior of the country, as its name denotes, and though far inferior to the preceding, it is a valuable wool for coarse yarns. It is white, occasionally dirty, of a short unequal staple, light and weak. It was long called bowed, because it was originally cleared from its seeds by the blows of a bowstring, a most fatiguing operation, which Whitney's saw-gin has superseded.

Tennessee.—Resembles the last sort, but is generally cleaner and better.

New Orleans.—Like the last two, but somewhat superior.

Pernambuco.—Has a fine long staple, clean and uniform. It is much used by the hosiers.

Maranham.— This is not quite of so good a staple as the last, nor so well cleaned; it holds the same rank as Demerara cotton.

Bahia.—Slightly superior to Maranham.

Surinam.—A long-stapled cotton, a faint yellow tinge, but a clean cotton; in request for hosiery.

Demerara.—This is a fine white glossy wool, generally very well cleaned, and picked before packing. It spins into a clean stout yarn, and has now risen to a level at least with the Pernambuco.

Berbice.—Like Demerara.

Egypt.—This cotton has been much improved in the course of some years, by the enlightened policy of the pacha. He imported seeds from Cyprus, Smyrna, Brazil, Georgia, and other countries, and has produced a cotton which occasionally comes near the sea-island. It is seldom well cleaned.

West Indian.—In the Bahamas a tolerably good cotton has been grown from the Bourbon seed, though much inferior to the Bourbon itself. The staple is fine and silky, but the cotton is not well cleaned.

Barbadoes.—This is of middling quality; staple rather short, but silky and strong. It contains too much of the seed husk.

The most direct mode, however, of arriving at a correct knowledge of the progress of the cotton cultivation in this country, is by examining the statistics of its production and exportation, from year to year. Not only was the production, but the exportation also, modified by various circumstances connected with our foreign policy during the early stages of the government. The war of 1812, together with the embargo, and the commercial restrictions which were consequent upon that event, tended to increase its production at that particular time, as we were cut off from foreign markets, and it was deemed the policy of the people to encourage their own manufactures. The manufacturing interest, at this period, revived throughout every part of the Union. But this interest was proportionately checked on the return of peace, for our markets then became flooded with foreign goods, not only from Great Britain, but the East Indies; and it was this influx of foreign fabrics which induced the application of the American manufactures for protection, and laid the foundation for the tariff of 1816. From the year 1768 to 1779, only about five millions of pounds were annually exported into England.

It has been computed that the entire growth of cotton in the world is one thousand millions of pounds, and that of this amount five hundred and fifty millions are produced in the United States; thirty in Brazil; eight in the West Indies; twenty-seven in Egypt; thirty-six in the west of Africa; one hundred and ninety in west of Asia; thirty-five in Mexico and South America, with the exception of Brazil; and fourteen elsewhere. This crop, at ten cents per pound, a price which is the least to which it has ever attained, without doubt would be worth one hundred millions of dollars. Of that amount it is estimated that three hundred and fifty millions of pounds are consumed or manufactured in England; one hundred and fifty millions in the United States; eighty in France; two hundred and fifty in India and China; twenty-five in South America and Mexico, including Brazil; thirty-five in Germany; forty-five in Turkey and Africa; ten in Spain; twenty in Prussia; and the remainder elsewhere. By this estimate it is stated that the value of cotton manufactures in England is annually one hundred and seventy millions of dollars; in France, seventy millions; and in the United States, fifty millions. We have inserted these estimates, which must be considered very general, in order to show the great magnitude of the cotton interest throughout the world so far as production and capital are concerned, and its relative importance to the United States.

The extension of the cotton culture produced by the augmented manufacture abroad and consequent demand, as well as by the invention of Whitney, was soon felt throughout the country, and new lands were constantly brought in to contribute to its production. What the precise amount of this increase was, from time to time, is unknown, excepting from a conjectural computation. A letter from the Secretary of the Treasury, transmitting to congress divers tables and notes on the cultivation, manufacture, and foreign trade of cotton, on the fifth of April, 1836, presents a thorough digest of the most important facts upon the subject that could be obtained, and in that letter we find a table showing the probable increase of the cotton production, from year to year. That table was compiled from the best data that could be procured, no official returns having been discovered of the growth of cotton in each state, and it was computed from the foreign exports of cotton from each state, the exports coastwise, the quantity exported from each not grown within its limits, and the amount yearly consumed within its limits. From this it appears that in the year 1791 the state of Georgia produced about a half a million of pounds, and South Carolina a million and a half of pounds during that year. In 1801, the states of North Carolina, Virginia, and Tennessee, had embarked in the same cultivation; the former having produced four millions of pounds; Virginia, five millions; and Tennessee one, during that year. Ten years afterward, tracts of new land had been colonized upon the banks of the Mississippi, and two millions of pounds of cotton had been produced in 1801, in that fruitful region of the country. Alabama and Mississippi were not backward in securing to themselves the advantage of this profitable product; and according to the estimate of the Secretary of the Treasury, twenty millions of pounds were produced in the former state, and ten in the latter state, during the year 1821. Florida and Arkansas soon followed, and by the production of the same staple, swelled to a considerable amount this species of production. From the document of the Secretary of the Treasury which was furnished to congress, we subjoin the following table, which shows the production, at periods of ten years, from 1791 to 1834:—

RELATIVE PROPORTIONS OF COTTON GROWN IN THE DIFFERENT STATES.

Years.	*Virginia*	*N. Caro.*	*S. Carol.*	*Georgia.*	*Florida.*	*Alabama.*	*Tennes.*	*Missis.*	*Louisia.*	*Arkans.*
1791	—	—	1¼	0¼	—	—	—	—	—	—
1801	5	4	20	20	—	—	1	—	—	—
1811	8	7	40	40	—	—	3	—	2	—
1821	12	10	50	50	—	20	20	10	10	—
1826	25	18	70	70	2	45	45	30	38	0¼
1833	13	10	73	73	15	50	65	70	55	0¼
1834	10	9¼	65	65¼	20	45	85	85	62	0¾

We also here exhibit the amount of cotton grown in the world during the same period, in order to show the relative proportion produced by the United States.

Years.	*The World.*	*United States.*	*Brazil.*	*West Indies.*	*Egypt.*	*Rest of Africa.*	*India.*	*Rest of Asia.*	*Mexico & S. A.*	*Other Places.*
1791	490	2	22	12	—	46	130	190	68	—
1801	520	48	36	10	—	45	160	160	56	15
1811	555	80	35	12	85	44	170	146	57	11
1821	630	180	32	10	6	40	175	135	44	8
1831	820	385	38	9	18	36	180	115	35	4
1834	900	460	30	8	25¼	34	185	110	35	4

Having thus traced briefly the progress of the cotton production in the United States, we propose to designate the different species of that product, and the mode of its cultivation in this country. There are three different species, each of which possesses numerous varieties, among the prominent of which are the *herbaceous cotton*, the *shrub cotton*, and the *tree cotton*. The shrub cotton, varying according to the climate, has a resemblance to a currant bush, and its size and appearance are modified in some measure by the soil. It is found wherever the herbaceous cotton is produced; its flower and fruit are similar to that plant, and it sometimes attains the height of ten or twelve feet, being common in the tropical portion of Asia, Africa, and America. This species is planted in holes seven or eight feet apart, the shrubs requiring to be well pruned and weeded; and with such culture the plantations will yield good cotton five or six years, two crops being sometimes gathered during a single year, the one from October to December, and the other from February to April. Of this species is the Guiana and Brazil. The tree cotton flourishes not only in some parts of this continent, but also in India, China, and Egypt, and also in some parts of the interior and western coast of Africa, and sometimes attains the height of from twelve to twenty feet. This, however, is of inferior quality, and we pass to a consideration of the annual herbaceous cotton, the species which is most commonly cultivated throughout the southern portion of the United States for market.

This cotton usually grows to the height of from eighteen to twenty-four inches, having leaves of a dark green, coursed by brownish veins, divided into lobes, its blossoms consisting of a flower of pale yellow, possessing one large pistil and five leaves, with a purple spot at the bottom. A pod appears as the flower falls off, which assumes a triangular form, and possesses a pointed end with three cells. As the cotton fruit ripens, it becomes brown, increasing to the size of a large filbert, when the pod soon bursts from the expansion of the wool, and a ball of snow-white or yellowish down is disclosed, comprised of three locks in the cells, closely adhering to the seeds, which somewhat resemble, although they are much larger than those of the grape. The short-staple cotton is inferior in quality, as we before remarked; still, since it can be produced over a wider extent of surface than the sea-island, its production extending over the greatest portion of our cotton-growing territory, and in much greater abundance than the former staple, it presents a source of larger wealth to the nation than the more valuable kind to which we have referred. This, therefore, may be considered of more im-

portance than the other in point of national profit; because whatever it lacks in quality, it makes up in the great quantity that is yielded by the soil of the southern and southwestern states.

The different species of cotton that are found in the United States, are divided into two principal kinds, the sea-island and the upland. The several varieties grown in the different states, are, however, generally distinguished in name by the different states in which they are produced, such as Tennessee, New Orleans, and Alabama, The most valuable species, the sea-island, has a long and fine staple, and is peculiarly adapted to the manufacture of the finest fabrics. In the production of this species, an influence appears to be produced upon the fabric by a saline atmosphere, so that it is only cultivated along the seacoast and low islands of South Carolina and Georgia, where the plant may be directly exposed to the atmospheric spray of the ocean. Salt indeed appears to be a most valuable assistant to its full perfection, salt mud being the most approved manure; and in proportion as the cultivation of the plant recedes from the ocean, its quality becomes coarser and less valuable. Its texture is silky, possessing a sort of yellowish hue; and being long as well as strong in the staple, it is used for the spinning of only the finest quality of yarn. The quality of the different kinds, however, varies in a great degree, a difference of double the price existing between the best and the inferior species. The upland cotton is of an inferior quality, being short-stapled and coarser, and is confined to the lands at a distance from the coast. Virginia, North Carolina, South Carolina, and Georgia, produce this species to a large amount, and as the new soil of the southwestern states has been cleared up, the cultivation has been extended, in a great degree, to Louisiana, Mississippi, Alabama, and other sections of that region; so that at the present time the great bulk of the cotton which is produced is derived from the southwest. The species which is thrown in the English markets as the New Orleans cotton, and that is produced upon the banks of the Mississippi, is of a fine quality, being glossy in its appearance, and although somewhat short in the staple, mixes freely with that which is longer. Next to this in quality is believed to be the Alabama upland, &c., that is not only short, but soft, valuable for the ordinary manufacture, and commands a good price in Liverpool. The species of cotton long known as the bowed Georgia, derives its name from the mode of cleaning it which formerly prevailed, a manipulation that was performed by means of a bowstring that was raised by the hand, and being let go, struck upon the cotton with such force that it was made more fit for the succeeding process. Another species of cotton of great value in the south, is the nankeen, of a yellow color, which, when manufactured, forms a beautiful fabric, and that is supposed to be the kind that was originally found in our continent. This cotton commands a much higher price than that which is pure white.

We have before alluded to the operation of the saw-gin of Whitney, which is principally used for the upland cotton, but not for the best species, as the action of this instrument is supposed to injure the texture of the sea-island. For the cleaning of this species, a roller-gin has long been used that consists of a pair of fluted rollers, about ten inches long, and five eighths of an inch in diameter, that are fitted into a frame. To these the motion is applied, and the cotton being pass ed through them, is thus separated from the seed and prepared for market. Formerly a switch was used for the purpose of cleaning the cotton, but it was found that this mode of cleaning was too laborious to be attended with beneficial results.

The mode of cultivating the cotton plant throughout the southern states is similar to that of the cultivation of the corn. It is usually planted about the month of March and April, although varying, of course, according to the climate, and requires to be regularly ploughed and hoed, in order to be kept clear of weeds. At a distance, a new cotton field resembles a field of green bunch-beans. Requiring a sandy soil, and water being its natural enemy, a species of land with a portion of argillaceous or siliceous matter appears to be the most favorable for its production. As it ripens in the fall, the bursting pods are picked out by slaves, who go through the field with a basket. After the harvest has been collected, it is placed in a cotton-house and the work of separating it from the seeds is commenced; and the cotton thus separated, is pressed into bales by means of a machine similar to a cider-press, and it is then ready for market. In the state of Mississippi, from one to two bales is believed to be frequently the produce of a single acre, the price of cotton lands in that state varying from ten to forty dollars, depending, of course, upon their different quality, and the measure of their fixtures.

Of the value of the sea-island cotton, forming as it now does, but a small proportion of our general cotton production, we may judge pretty accurately, from the fact that in 1834, the export of this species of cotton was $8,085,935, and during the following year it was $7,752,936, the whole of this product being produced in the states of South Carolina and Georgia. It is believed that its cultivation may be much extended, especially in the territory of Florida; and the export, during twenty years, has been on an average of about eight millions of pounds, the principal portion being carried to England.

The increase of the cotton production of the country has been gradual and solid, according to the extension of manufactures and the demand for the product. It is well known that cotton has been rapidly extended to the southwestern states as new colonies have spread themselves upon their territory, so that at the present time the main body of the exports is derived from that section of the country; and during the years 1839, '40, 954,191 bales were exported from the single port of New Orleans. The precise measure of this increase may be pretty well ascertained from the statistics of the country. It will be remembered that the amount of exportation contained in the subjoined table is exclusive of the quantity that is consumed in the manufacturing establishments of the United States.

GROWTH AND EXPORT OF AMERICAN COTTON.

Table, exhibiting the annual Exports of Cotton from the United States since 1791; *the Value of Cotton of domestic Growth; and the total Product of the United States, as compared with that of the whole World.*

YEARS.	POUNDS.	POUNDS.	VALUE.	TOTAL PRODUCTS.	
				UNITED STATSE.	THE WORLD.
				POUNDS.	POUNDS.
1791	189,316	Prior to 1805, the aggregate of exports is given without distinguishing the sea-island from the upland. The value of the exports is given from 1802.		2,000,000	490,000,000
1792	138,328			3,000,000	—
1793	487,600			5,000,000	—
1794	1,601,760			8,000,000	—
1795	6,276,300			8,000,000	—
1796	6,106,729			10,000,000	—
1797	3,788,429			11,000,000	—
1798	9,360,005			15,000,000	—
1799	9,532,263			20,000,000	—
1800	17,789,803			35,000,000	—
1801	20,911,201			48,000,000	520,000,000
1802	27,501,075		$ 5,250,000	55,000,000	—
1803	41,105,623		7,920,000	60,000,000	—
1804	38,118,041		7,650,000	65,000,000	—
	SEA-ISLAND	UPLAND.			
1805	8,787,659	29,602,428	9,445,600	70,000,000	—
1806	8,096,082	29,561,383	8,332,000	80,000,000	—
1807	8,926,011	55,018,448	14,232,000	80,000,000	—
1808	949,051	9,681,394	2,221,000	75,000,000	520,000,000
1809	8,654,213	42,326,042	8,515,000	82,000,000	—
1810	8,604,078	84,657,384	15,108,000	85,000,000	—
1811	9,029,579	54,028,660	9,652,000	80,000,000	555,000,000
1812	4,367,806	24,519,571	3,080,000	75,000,000	—
1813	4,134,849	14,975,167	2,324,000	75,000,000	—
1814	2,520,338	15,268,669	2,683,000	70,000,000	—
1815	8,449,951	74,548,796	17,529,000	100,000,000	—
1816	9,900,326	72,046,790	24,106,000	124,000,000	—
1817	8,101,880	77,547,448	22,628,000	130,000,000	—
1818	6,457,335	86,013,843	31,334,000	125,000,000	—
1819	7,448,775	80,508,270	21,082,000	167,000,000	—
1820	11,569,015	116,291,137	22,309,000	160,000,000	—
1821	11,344,066	113,549,339	20,157,484	180,000,000	630,000,000
1822	11,250,635	133,424,460	24,035,058	210,000,000	—
1823	12,136,688	161,586,582	20,445,520	185,000,000	—
1824	9,525,722	132,843,941	21,497,401	215,000,000	—
1825	9,665,278	166,784,629	36,846,649	255,000,000	—
1826	5,972,852	198,562,563	25,025,214	350,000,000	—
1827	15,140,798	279,169,317	29,359,545	270,000,000	—
1828	11,288,419	199,302,044	22,487,229	325,000,000	—
1829	12,833,307	252,003,879	26,575,311	365,000,000	—
1830	8,147,165	290,311,937	29,674,883	350,000,000	—
1831	8,311,762	268,668,022	25,289,492	385,000,000	820,000,000
1832	8,743,373	313,471,749	31,724,682	390,000,000	—
1833	11,142,987	313,553,617	36,191,105	445,000,000	—
1834	8,085,937	376,631,970	49,448,402	460,000,000	900,000,000
1835	7,752,736	379,606,256	64,961,302	475,000,000	—
1836	8,544,419	415,086,888	71,284,925	480,000,000	—
1837	5,286,971	438,924,566	63,240,102	500,000,000	—
1838	7,286,340	588,665,957	61,556,811	520,000,000	—
1839	5,107,404	408,516,808	61,238,982	500,000,000	—

It is supposed that the United States supplies about three fourths of the cotton trade of the world, and when we consider the value of this production to the wealth of the country, we cannot but regard it as of vast importance. Of the amount of capital invested in this production, it seems difficult to form any certain conclusion. New lands are continually brought into the culture of this staple, and extensive tracts are becoming exhausted as the soil, from time to time, is bereft of its fertilizing principle. The secretary enters into a hypothetical course of reasoning, in order to show the amount of soil that is occupied by its culture, and the capital employed for that object. It is believed by him that, at the date of his report, 1836, the whole amount of land that was used in the cultivation of the cotton in this country was not far from two millions of acres.

His estimate, which is in a great measure conjectural, being founded on general data, is based upon the average cost of cotton lands, wild or cleared, by the acre; the expense of clearing them, and also the labor required in production of a given quantity of raw cotton; the cost of labor, whether in the form of wages or otherwise; the expense of the tools that are used upon the plantations; the horses and other animals required upon them; the salaries of overseers; and taxes: beside other minor expenses. It is well known that the average price of wild cotton lands did not formerly exceed half a dollar per acre, and in the new states it has ranged from one dollar and twenty-five cents to twenty dollars, depending, of course, upon the quality of these lands, their location, and the existing price of cotton; and actual settlers are frequently obliged, as in the new states of the north, to give from fifty to one hundred per cent. to the original purchaser.

The expense of clearing this wild land is believed to be from ten to fifteen dollars per acre; and when in a condition to be cultivated, it will yield from two hundred and fifty to three hundred pounds of clean cotton; while the production of the cotton land in the older states is supposed to be one hundred and twenty-five pounds clean, or five hundred in the seed. The price of cotton is, of course, constantly varying, from the operation of numerous causes; but, by the same report, we learn that during the month of June, in 1835, the upland cotton brought from 10d. to 12¾d. per pound, the Orleans from 10 to 13, the Alabama from 9¾ to 12¾, and the sea-island from from 23 to 24d., in the markets of Liverpool. It is also alleged that one field-hand or laborer can cultivate, on an average, eight acres, and assist, at the same time, in raising from five to eight acres of corn. The price of field-hands has nearly doubled within the last ten years, so that those who would produce in market from four to five hundred dollars, can now be purchased only for about seven or eight hundred. The interest with which his calculation must be fraught, considering the present amount invested in the cotton culture, induces us to lay before our readers the result of his computation.

1st. The capital invested in cotton lands under cultivation, at two millions of acres, and worth, cleared, on an average, $20 per acre, is	$40,000,000
The capital in field-hands, and in other lands, stock, labor, &c., to feed and clothe them, at $106 per year, on 340,000 in number, would require the interest or income of a capital, at 6 per cent., of	544,000,000
The maintenance of 340,000 more assistants, &c., at $30 each per year, would require the income of a capital, at six per cent., of	167,000,000
The capital to supply enough interest or income to pay for tools, horses for ploughing, cotton taxes, medicines, overseers, &c., at $30 for the first 340,000 would be	167,000,000
Making in all a permanent capital, if so used, equal to	$918,000,000
2d. The capital in cotton land, as stated above,	$40,000,000
Capital in the purchase of 340,000 field-hands at $800 each, on an average,	272,000,000
Capital in the other 340,000, to aid and to raise food, clothing, &c., at half price,	136,000,000
Capital in horses, cattle, sheep, utensils, &c., for plantation, about $30 to each person, to aid in making food, clothing, &c.,	20,400,000
Capital in other lands, to support stock, raise corn, &c., at 20 acres to each of the 680,000, worth $20 per acre, cleared,	272,000,000
Capital, temporary or floating, to buy clothing not made on plantation, pay taxes, overseers, freight, tools, for cotton, &c., at $45 to each,	30,600,000
	$771,000,000

Making in the whole about $740,000,000 permanently invested, and about 30,000,000 circulating.

This calculation, although spread out upon pretty broad premises, if not accurate, will at least tend to show us the vast general amount of the capital invested in the cotton culture, as it was made upon mature examination, and is doubtless somewhere near the truth.

The increase in the amount of the production of cotton, has been extraordinary. The cotton crop of the United States, for the year ending 30th September, 1840, was two millions one hundred and seventy-seven thousand eight hundred and thirty-five bales, from which exports to a great amount were made from New Orleans, Natchez, Mobile, Florida, Savannah, Charleston, Georgetown, North Carolina, and Virginia. During the year 1835 there was raised in the country, one million three hundred and sixty thousand seven hundred and twenty-five; in 1836, one mill-

ion four hundred and twenty-two thousand nine hundred and thirty; in 1837, one million eight hundred and one thousand four hundred and ninety-seven; in 1838, one million three hundred and sixty thousand five hundred and thirty-two; and in 1839, two million one hundred and seventy-seven thousand eight hundred and thirty-five; a great proportion of this amount being exported abroad, besides that part of the crop which is exported coastwise to the northern states, for the purpose of being used in their manufacturing establishments.

The mode of trading in cotton is conducted upon a well-established plan. It is customary for the southern planters frequently to consign the cotton to foreign ports upon their own account, but much the greater portion is shipped by mercantile houses, to which it is sold by the growers, the chief market being in Liverpool. The ordinary plan of conducting the sales in that city, is through the agency of brokers, who value and sell it, charging 10s. per £100 for their commission. Brokers are often employed by the buyers, who are Manchester cotton-dealers, to make their purchases, and who usually allow the same commission. The cotton itself is bought by sample, the purchasers seldom having occasion to examine the bulk; yet so strict are the principles of mercantile honor and integrity which prevail among them, that, although the bargains are transacted in a mode which would not make them legally binding, a dispute or difficulty seldom arises. If, however, any misunderstanding should occasionally occur, is is immediately referred to one of their number, as a court of arbitration, and the difficulty is without delay satisfactorily adjusted. The ordinary credit allowed for the goods is ten days, when the payment is received in bills at three months. If, however, as frequently happens, bills are cashed by the bank, at three and a half per cent., the purchasers accept the alternative which is usually offered to them, and pay cash, deducting five per cent. interest.

As an article of trade, the material of cotton is destined to advance to increasing importance. We have received from a planter of cotton in Georgia, who has made careful examination of this substance, many interesting suggestions as to its actual value. That it is designed to come into increasing use, there can be no doubt. The more opulent portion of the population of every civilized country may perhaps prefer the richer and more expensive kinds of dress; but from the cheapness, comfort, and durability of cotton fabrics, it is evident that they must grow into increasing, and ultimately into general use. Of the particular advantages of this fabric, it would be easy to inform our readers. The costly fabrics, composed of merino-wool, silk, and flax, will doubtless be used as a matter of luxury, but they are placed by their price beyond the reach of the great bulk of any people. The purposes to which cotton may be applied are multiplying as its advantages become more and more demonstrated. Even for sailcloth it is believed to be lighter, closer, and cheaper, than hemp. We are informed that it does not mildew, and that it is not easily affected by the salt spray; and that fact appears to be founded upon obvious principles. The first process that is used upon hemp or flax is to steep it in water, this process tending to rot the woody part of the plant; and it is evident that this effect is not produced until a portion of the bark or fibre undergoes a certain measure of fermentation, and, in consequence, putrefaction; and it is well known that the value of the hemp and flax depend in a great measure upon the skill with which this process is applied by the grower; and it is equally clear that when the operation is first commenced, it is more likely to be continued. Cotton, on the contrary, comes into the woof after it has been carefully protected from the weather, and possesses in its texture a certain portion of oil; and as its fibres, like hair and wool, are composed of hollow tubes, it is believed that this substance is peculiarly calculated to be enduring. It has also been maintained that cotton may be applied with great advantage to the running rigging of a ship, in the fact that it is not only light and soft, and superior to Manilla hemp, but that it is double in strength and permanence; and that the expense of this substance for rigging lines and nets would not be greater than one half of that of the former article. Blankets of cotton are used to a considerable extent in France; and it is believed that from its elasticity, which enables it to swell to the wood, and from the fact that it is indestructible under water, it may be applied with great advantage to the calking of ships. The ships of the Hindoos are believed to last for centuries, and this durability has been referred as well to the cotton with which they are calked, as to the teak-wood of which they are constructed, and the chenam which covers their bottoms. But it is to the general use of cotton as an article of dress and domestic comfort, as well as its importance to the mercantile community, that its chief existing value may be referred. It has already won its way into the confidence of men to such a degree, that many of the old fabrics that were commonly used are rooted out, and in proportion to the increasing manufacture will that use be extended.

It will be naturally inferred that the manufacturers of England are mainly dependant upon the cotton production of the south, as is very evident from the amount of our production and exportation compared with other portions of the globe; and this leads us into a brief view of the extent of the cotton manufacture in the United States. Ever since the time when Alexander Hamilton, that greatest of practical financiers, made his powerful report as secretary of the treasury, thus laying the foundation of what has been termed the American System, the interest of the cotton manufacture has slowly but strongly advanced, so that it has now arrived to an importance which is hardly second to any other national interest of the country. We do not propose here to enter into a description of the respective merits of free trade and the tariff, or to attempt to show how far the interests of the whole country would be advanced by protecting the manufacturing enterprise of the northern

states, or the prosperity of the country would be promoted by throwing open our ports to the foreign commerce of the world. Doubtless a general consent of nations to receive reciprocally the productions of each, be they of the plough or the loom, would be of advantage to all; but it is a broad question, and one which is destined to receive ample discussion upon the expiration of the present tariff law, whether, in the absence of this reciprocal arrangement, nations are not bound to protect themselves. It has been our present object to sketch a brief view of the cotton manufacturing interest, as it is intimately connected with the cotton production, for the moral and economical effects of manufactures unfold a question so broad and complex, that it would be unsuited to the present design, and could not be properly discussed within moderate limits.

This much, however, is certain that the manufacturing interest of our own country has already grown to great strength, and there is scarcely a waterfall in New England that is not enlivened by the clattering of machinery; and the numerous little thrifty villages that dot the valleys and hills of our manufacturing states, as well as the large settlements, such as Lowell, that have grown into the magnitude of cities, must convince us that a great amount of capital and enterprise is invested in this branch of human labor. The manufacturing interest, indeed, is not confined to New England, New York, and New Jersey; Pennsylvania, Delaware, Maryland, Virginia, and some of the western states, have embarked in it to a greater or less extent; and as early as 1831, the capital employed in the cotton manufacture alone, throughout the eastern states, was $40,612,984. It is now well known that twelve of the eastern states, and a portion of the west, are interested in different degrees in this subject; and with the measure of influence that they can command, it is probable that an elaborate and powerful discussion will attend the agitation of the manufacturing policy when the question shall come up before the national legislature.

Among the strange things that constantly meet our sight in this age of wonders, there is scarcely anything more extraordinary than the operation of cotton-spinning, a discovery of modern times. We behold a vegetable production, growing upon extensive portions of our territory, cleaned from its seeds by machinery, and transported by railroad or steamboat to the manufacturing establishment, where it is to be worked up. We are here introduced into an iron world of machinery, made by the inventive genius of man, machinery which has ten thousand more hands than those of Briareus. Going through the various processes that belong to the operations of such machinery, it comes out in a short time snow-white cloth, that is, in its texture and pliancy, almost essential to human comfort. In the exactitude of the operations of this machinery, and its beautiful adaptation to human wants, we are impressed with a species of admiration akin to that with which we view the vast and harmonious mechanism of the universe, and can hardly fail to be inspired with the enthusiasm of Dr. Darwin, when he viewed the operations of Arkwright's establishment upon the Derwent:—

"Where Derwent guides his dusky floods,
Through vaulted mountains and a night of woods
The nymph Gossypia treads the velvet sod,
And warms with rosy smiles the watery god;
His ponderous oars to slender spindles turns,
And pours o'er massy wheels his foaming urns,
With playful charms her hoary lover wins,
And wields his trident while the monarch spins,
First with nice eye emerging naiads cull
From leathery pods the vegetable wool;
With wiry teeth revolving cards release
The tangled knots, and smooth the ravelled fleece,
Next moves the iron hand, with fingers fine,
Combs the wide card, and forms the eternal line.
Slow, with soft lips, the whirling can acquires
The tender skeins, and wraps in rising spires;
With quickened pace successive rollers move,
And these retain and those extend the rove;
Then fly the spokes, the rapid axles glow,
While slowly circumvolves the laboring wheel below."

We understand that in the general operations of the American cotton-trade, there is no settled and uniform plan. The planters in the interior, both of the extreme southern states, and the cotton-growing region along the shores of the Mississippi, sometimes dispose of their cargoes to the factors upon the frontier; and from the ports of New Orleans, Natchez, Mobile, Charleston, Savannah, and other seaports, the cotton is either shipped to New York, or is exported abroad. Frequently, however, the planters of the south procure from the merchants of New York advances upon their crops, even while growing upon the field. In order to judge of the value of the production in the country, compared with the whole amount of our exportation, it may be stated that during the year ending in September of 1839, the total value of the product of the sea, the forest, agriculture, and manufactures, that was exported, was one hundred and three millions five hundred and thirty-three thousand eight hundred and ninety-one dollars, of which exportation there was sixty-one millions two hundred and thirty-eight thousand nine hundred and eighty-two dollars in cotton alone; and that from the year 1839 to September, 1840, the total cotton crop of the United States was two millions one hundred and seventy-seven thousand eight hundred and thirty-five bales, each containing, we suppose, three hundred pounds.

In connexion with the long view that we have taken of the prominent agricultural staple of the south, we are naturally led to a rapid glance at the social structure of that portion of our country. We find a people in this region, scattered over its fertile soil, upon the southern borders of the country, from the Atlantic coast to the fields of Arkansas, accustomed to peculiar habitudes of life, and marked by peculiar features. Although in the several cotton-growing states of the south, both at the east and west, there are certain general traits, yet these are modified according to the local circumstances of the different parts. For example, the cotton grower of Georgia exhibits a somewhat different form of character from the planter of Louisiana or Mississippi; and they, in turn, may be easily distinguished from the Virginian, or the cultivator of South Carolina;

but they all possess certain peculiar features. The wide distinction which exists between the population of New England, and that of the southern states, is perceived on the first entrance into the southern territory. The native of New England and the population of the south are derived from distinct stocks; the one being possessed of all the coolness, forecast, and laborious hardihood of the soldiers of Cromwell, and the other of those ardent, generous, self-sacrificing and chivalrous features that belonged to his rivals the cavaliers; and these traits of character have been strengthened by the local causes that have acted upon their daily lives.

For that bustling air of thrift which prevails throughout our northern states, not only in their domestic arrangements, but also in the appearance of the villages and the general aspect of the territory, we search in vain in the southern states. And yet the southern planter possesses energy when aroused, and ardor that is sufficient for any emergency. In advancing upon his domain, we are struck with the absence of that vigorous supervision of the great avenues of communication that would astonish a robust overseer of roads and bridges in New York or New England. Even the vehicles of travel are, in general, of such a sort as would lead one to suppose that the people do not at least invite the ingress of strangers, and are not themselves anxious to journey through their own territory in public conveyances. Nor is there scattered through the south, those evidences of wealth that one might naturally look for in a country yielding so abundant and so valuable crops as does the greater portion of that country. The houses small and surrounded by the scanty dwellings of the negroes, the bridges decayed or broken, the roads, which seem scarcely ever repaired, zigzag cedar rail fences, indicate either a want of thrifty enterprise on the part of the inhabitants, or such poverty as would seem to prevent a due degree of attention to their condition. The slaves, who, it is well known, perform the drudgery of cultivation, although deprived of what in the north we should call luxury, are attended to so far as their bodily comfort is concerned, and are, for the most part, attached to their employers. Performing their allotted tasks, they also have their humble seasons of recreation; and as those tasks are seldom severe, excepting in ginning the cotton, and gathering in the harvests upon the rice lands, they are contented, during their occasional merry-makings and holidays, with their proportion of meat and tobacco, pipes and ardent spirits. If they should be allowed, as is frequently the case, a small patch of land to cultivate for their own use, the produce of these acres frequently brings additional comfort to their wardrobes, a superannuated coat, or silk handkerchief, with which they array themselves on their gala days, presenting the appearance of a masquerade.

It may be safely alleged that the genuine southern planter, in his own home, exhibits to the stranger a noble form of hospitality. Without the ostentation that would display itself in dress or equipage, being often carelessly arrayed in homespun while upon his own fields, he welcomes the traveller to all the comforts that can be furnished by his dwelling. His house, his plantation, his blood-horse, belong to the stranger so long as the stranger is a guest. This hospitality springs not less from the general tone of liberality which despises meanness, than from the insulated position of most of the planters of that portion of the country, who are glad to meet with any person who will bring them news from abroad. The cotton cultivator of the south is a fine specimen of the old English gentleman, not only in the magnanimity of his views, but in the total absence of that starched formality which is often mistaken as a badge of real dignity and importance. Nor are they less marked by their ordinary habits of hospitality and their personal traits than in the character of their amusements. The sports of the field occupy a considerable portion of their leisure time; and hunting and the race-course present for them the most solid charms. This freedom of manners pervades the female portion of the population, and runs through the whole circle of society. That amenity of manners which is always the evidence of polished education, that simplicity of address, which is the more beautiful because it is natural, that open ingenuousness of carriage which gives confidence and ease to all within its presence, and that delicacy of sentiment founded upon a cultivated taste which indicates the most chastened form of accomplishment, throws around their social intercourse a charm which, in order to be appreciated, must be experienced; and it is the traits that we have thus described which must give to this class of our population great influence, not only in the saloon, but the hall of legislation.

The prosperity of the south may, without doubt, be mainly attributed to the cultivation of the cotton plant, and upon the continuance of that production its future prosperity must in a great measure depend. A source of wealth might indeed have been derived from the rice, tobacco, indigo, and sugar crop, as well as her other staples, but that wealth would have borne but a small proportion to the profit which is now experienced, and that is likely to be increased by the cultivation of the cotton. So firmly has the value of this grand staple been fixed, and so extensively has its use intertwined with our most ordinary comforts, and the manufacture of the plant has become so much increased, not only in this country, but in Europe, that nothing short of a pestilence that should sweep away its population, a blight, or a mildew, or an insect that should blast its crops, or an earthquake that should rive the land, could prevent the continuance of the same causes that have in so great measure contributed to its wealth. And yet, with these abundant resources, the population of the greater portion of that country are not advancing in this respect. A few of the most shrewd and laborious manage to accumulate large fortunes; yet the liberal and free indulgences of much the greater part scarcely enable them to pay their expenses from year to year, and often, as it is well known, the harvest of one year is as it were mortgaged for the expenses of the next,

and those means which in the hands of some would be a source of vast profit, become in their hands a cause of mere competence.

In concluding our imperfect remarks, we cannot but take a brief view of the relative importance of the cotton cultivation to the other great sources of our national enterprise, for its profits by exportation are of greater magnitude than those of any other agricultural interest. The beautiful variety that is spread out by the different soils and climates of the republic, strike the mind with admiration. In our northern states, lying, as they do, upon the seacoast, the broad and rich field of the ocean is stretched before the keels of commerce, and that field has been ploughed with extraordinary advantage both in foreign trade and in the various species of our fisheries. The sound of machinery has there too commenced. The fur-trade is fast receding from our western forests, as the tide of emigration rolls onward through their fertile soil; and in its track spring up the blooming fruits and flowers of abundant harvests, from the corn and the wheat field—products which are most salutary to the nation, because they furnish an abundance of what are most urgently required by all in the article of food. Along our southern coast, a vegetable is cultivated which bids fair to pour forth upon the nation a vast amount of wealth, that must necessarily increase as the augmentation of population affords a market for its fabrics, and the extensive tracts of new soil equally favorable to the production of cotton with those which are now employed in its cultivation, shall have been laid open to the plough; thus furnishing cargoes for our ships, and supplies for our manufacturing establishments.

FOSSILS.

The word *fossil* was formerly applied to minerals, and in fact to all substances dug out of the earth; but since geology has assumed the character of a distinct and important science, the application of this term is more circumscribed, and is now used only in speaking of petrified substances, animal and vegetable. In this sense of the term, it may be alleged that there are fossil remains of

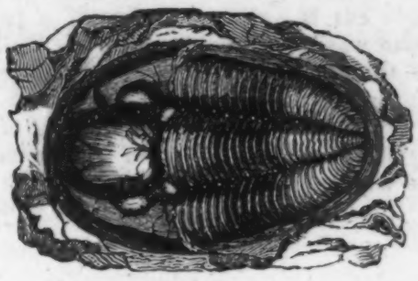
Among bodies belonging to the sea.	Shells; Coral and sponges; Radiated animals, such as star-fish; Reptiles resembling crocodiles; Fishes: Cetacea or the whale tribe; Crustacea, such as lobsters and crabs; Plants.
Among bodies belonging to the land.	Fresh-water shells found in lakes and rivers; Land shells, such as the garden-snail; Quadrupeds; Reptiles; Birds; Insects; Stems of trees and wood; Smaller plants and leaves;

"Fossils," says a popular writer, "reveal to us the important and wonderful fact, that the Author of Nature had created different species of animals and plants, at successive and widely distant intervals of time, and that many of those that existed in the earlier ages of our globe had become totally extinct, before the creation of others in later periods; that prior to man being called into existence, innumerable species of living beings had covered the surface of the earth, for a series of ages, to which we are unable, and probably shall ever remain unable, to fix any definite limits. We farther learn, that a very large proportion of those creatures, of the later periods, had become extinct, and had been replaced by the animals which now exist, before the creation of our first parents. When that great event took place, the crust of the earth had already undergone numerous changes, affording indisputable proof of a great design; to be evidences the most clear of the establishment of an order of things adapted to the predetermined nature of that most perfect creature about to be sent as an inhabitant of the globe, to whom was to be given "dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth."

We are also taught by the study of fossils, that, prior to the creation of man, there had existed a totally different condition of our planet, in so far as regards the distribution of land and water, from that which now exists; that where there are now vast continents, there must have been deep seas, and that extensive tracts of land must have occupied those parts of the globe which are now covered by the ocean. In many parts of the interior of the continent, there must have been vast lakes of fresh water like those of Huron, Erie, Ontario, &c., in this country, which were drained by subsequent changes in the form of the land which bounded them, and were replaced by wide valleys, long antecedent to the existence of man. As one proof, shells are found upon the tops of mountains which were evidently once submerged. In the very heart of France, in a district along the bank of the river Allier, vast strata, full of fresh-water shells, prove that there must have existed, for many ages, a lake nearly a hundred miles long and twenty miles in average breadth. Similar facts exist in our own country; and imagination does not go beyond possibility in picturing to the mind the time when those vast inland seas of our continent, before mentioned, will be changed into fertile valleys, teeming with human life, and vocal with the hum of human avocations.

We find in the lower strata of rocks that the organic remains consists chiefly of coral and shells; that is, of animals having the most simple anatomical structure. As we ascend toward the surface of the earth, the proportion of animals of

more complicated form, increases, the bones of land quadrupeds being almost entirely confined to the more recent members of the tertiary strata. These circumstances warrant the belief that the first animals which were created, were of an exceedingly simple structure, that they gradually became more complex in their frame, and that at last the highly complicated mechanism of the human body, was the completion of those repeated efforts of nature toward perfection. There have been many ingenious but evidently unsound theories built upon these geological facts, but we have not space to notice them. They may be found at some length in the second volume of Lyell's Principles of Geology.



Trilobite.

There is a singular species of crustaceous marine animal, found in a fossil state, which has been wholly extinct from an early period in the formation of the crust of the globe; and myriads of ages may have elapsed since it ceased to exist. Geologists give it the title of *Trilobite*, from the body being composed of three longitudinal divisions or lobes. It has not been found in any rock lying above the mountain limestone, and that rock is so low in the series of the strata that the earth must have undergone many successive revolutions, each separated by an interval of vast duration since the time when these animals were inhabitants of the sea.

This fossil was first brought under the notice of naturalists by the name of the Dudley fossil, being found very frequently in the limestone near the town of that name in Worcestershire, England. It is also found in other parts of England, Wales, Germany, Sweden, and this country. It is met with in some spots in such immense quantities, that it must have had prodigous power of multiplication. In some parts of Wales the slate is so full of fragments of this animal, that millions must have swarmed on those spots.

The specimen represented in our engraving, was found in Otsego county, in the state of New York, by George L. Le Row, Esq., of Poughkeepsie, and is now in his possession. It is a very perfect specimen, and eminent geologists have decided that it is a species hitherto unknown. It was examined by the late Professor Green of Philadelphia, who classed it under the head of Calemene; and as the variety was new he named it "Calemene Rowii," from the name of its discoverer.

THE VALLEY OF PEACE.—Mrs. C. M. Sawyer.

[It was a beautiful conception of the Moravians to give to rural cemeteries the appropriate name of "*Valleys*" or "*Fields of Peace.*"]

Oh, come, let us go to the Valley of Peace!
There earth's weary cares to perplex us shall cease;
We will stray through its solemn, and far-spreading shades,
Till twilight's last ray from each green hillock fades.
There slumber the friends whom we long must regret—
The forms whose mild beauty we cannot forget!
We will seek the low mounds where so softly they sleep,
And will sit down and muse on the idols we weep;
But we will not repine that they are hid from our eyes,
For we know they still live in a home in the skies;
But we 'll pray that, when life's weary journey shall cease,
We may slumber with them in the Valley of Peace!

Oh, sad were our path through this valley of tears,
If, when weary and wasted with toil and with years,
No home were prepared, where the pilgrim might lay
Mortality's cumbering vestments away!
But sadder, and deeper, and darker the gloom,
That would close o'er our way as we speed to the tomb,
If faith pointed not to that heavenly goal,
Where the sun of eternity beams on the soul!
Oh, who, 'mid the sorrows and changes of time,
E'er dreamed of that holy, that happier clime,
But yearned for the hour of the spirit's release—
For a pillow of rest in the Valley of Peace!

Oh, come, thou pale mourner, whose sorrowing gaze
Seems fixed on the shadows of long-vanished days—
Sad, sad is thy tale of bereavement and wo,
And thy spirit is weary of life's garish show!
Come here—I will show thee a haven of rest,
Where sorrow no longer invades the calm breast—
Where the spirit throws off its dull mantle of care,
And the robe is ne'er folded o'er secret despair!
Yet the dwelling is lonely, and silent, and cold,
And the soul may shrink back as its portals unfold;
But a bright star has dawned through the shades of the east,
That will light up with beauty the Valley of Peace!

Thou frail child of error! come hither and say,
Has the world yet a charm that can lure thee to stay?
Ah, no! in thine aspect is anguish and wo,
And deep shame has written its name on thy brow!
Poor outcast! too long hast thou wandered forlorn,
In a path where thy feet are all gored with the thorn—
Where thy breast by the fang of the serpent is stung,
And scorn on thy head by a cold world is flung!
Come here, and find rest from thy guilt and thy tears,
And a sleep sweet as that of thine innocent years!
We will spread thee a couch where thy woes shall all cease,
Oh, come and lie down in the Valley of Peace!

The grave! ah, the grave! 't is a mighty strong-hold,
The weak, the oppressed, all are safe in its fold!
There penury's toil-wasted children may come,
And the helpless, the houseless, at last find a home!
What myriads unnumbered have sought its repose,
Since the day when the sun on creation first rose:
And there, till earth's latest, dread morning shall break,
Shall its wide generations their last dwelling make!
But beyond is a world—how resplendently bright!
And all that have lived shall be bathed in its light!
We shall rise—we shall soar where earth's sorrows shall cease,
Though our mortal clay rests in the Valley of Peace!

ETRUSCAN ART.

Before proceeding to notice the art of painting as it existed among the Romans, we will briefly view it as cultivated by the Etruscans, a very ancient people who inhabited that part of Italy now called Tuscany. Very few of their works have come down to us, owing, probably, to the fact that the Romans made it a point to destroy everything connected with the glory of a country which they had conquered. Specimens of Etruscan art, therefore, are very rare, and are only found in excavations where once stood Roman villas, that were adorned by these spoils of the vanquished.

It is the opinion of most writers on the subject, that the people of Etruria cultivated the arts of design at a very early period, perhaps anterior to those of Greece. They were a powerful people at least nine hundred years B. C., and three hundred before the time of Pericles. They possessed twelve large cities, and, when Romulus laid the foundation of Rome, they had far advanced in science and the arts. Whether the Fine Arts had been cultivated to a proportionate extent with the useful arts, is a matter of speculation. Wincklemann, who is excellent authority, thinks that they had made considerable progress in the arts dependant on design, before their communication with Greece. Pliny relates that, at Cœre, in Etruria, and at Ardea and Lanuvium, there existed, in his time, some paintings which attracted the attention of the curious, and which he says were "more ancient than the foundation of Rome."—"I cannot contemplate," he continues, "without astonishment, those paintings at Cœre, which appear recent and fresh after so many ages. The same may be said of the Atalanta and the Helen, which are seen in a ruined temple at Lanuvium. The artist has represented Atalanta naked, and both the figures are of exquisite beauty."

About 1760, a Theatine monk discovered, near the ancient Tarquini, formerly belonging to Etruria, quite a number of tombs, whose freizes were decorated with paintings, The pilasters, also, were thus decorated. The celebrated Tuscan vase, which was dug up from the ruins of Adrian's villa at Tivoli, is a splendid specimen of their art. Some, ignorant of the fact that the Etruscans were probably rivals of Greece in the cultivation of the fine arts, have asserted that this piece of workmanship is from the chisel of Lysippus, who with Praxiteles flourished when the arts were in their meridian splendor in Greece. This vase is now at Warwick castle, in England, and from that circumstance is generally mentioned as the Warwick Vase.

Etruscan Vase.

But as we have before observed, the works in stone of the Etruscans were not always decorated by sculptures. The monuments or tombs just mentioned, were adorned with paintings, and so also were many of their vases and urns. The above cut is a representation of a painted vase, which was in the possession of Sir William Hamilton, the original owner of the Warwick vase. It was found in Tuscany (Etruria), and is not only an excellent specimen of their style of ornamenting but of the symmetry of proportions and outline which distinguished the Etruscan school.

Outline History of the Fine Arts.

EARLY MARRIAGES.

Mr. Johnson, in his *Economy of Health*, gives the following as his opinion on early matrimony and its consequences:—

The most proper age for entering the holy bonds of matrimony has been discussed but never settled. I am entitled to my opinion; and although I cannot here give the grounds on which it rests, the reader may take it for granted, that I could adduce, were this the proper place, a great number of weighty reasons, both moral and physical, for the dogma I am about to propound. The maxim, then, which I would inculcate is this—that matrimony should not be contracted before the first year of the fourth septenniad, on the part of females, nor before the last year of the same in the case of the male; in other words the male should be at least twenty-eight years old. That there should be seven years difference between the ages of the sexes, at whatever period of life the solemn contract is entered upon, need not be urged, as it is universally admitted. There is a difference of seven years, not in the actual duration of life in the sexes, but in the stamina of the constitution, the symmetry of the form, and the lineaments of the face. The wear and tear of bringing up a family might alone account for this inequality; but there are other causes inherent in the constitution, and independent of matrimony or celibacy.

In respect to early marriage, as far as it concerns the softer sex, I have to observe, that, for every year at which the hymenial knot is tied below the age of twenty-one, they will be on an average three years of premature decay of the corporeal fabric; and as considerable abbreviation of the

usual range of human existence. It is in vain to point out instances that seem to nullify this calculation. There will be individual exceptions to all general rules. The above will be a fair average estimate.

On the *moral* consequences of too early marriages, it is not my intention to dilate; though I could adduce many strong arguments against, and very few in favor of the practice. It has been said that matrimony *may* have miseries, but celibacy has no pleasures. As far as too early marriage is concerned the adage ought to run thus—'marriage must have miseries, though celibacy *may* have no pleasures.'

The choice of a wife or a husband, is rather foreign to my subject, and has occupied much abler pens than mine to little advantage. My own opinion is, that were the whole of the adult population registered as they come of age, and each person, male and female draw a name out of the urn, and thus render matrimony a complete lottery, the sums total of happiness, misery, or content, would be nearly if not exactly the same as upon the principle of selection. This, at first sight, will appear a most startling proposition, but the closer we examine it, the less extravagant it will be found."

COMMODORE PERRY.

Lieutenant Mackenzie, in his Life of Commodore Perry (Family Library Nos. 126–'27) thus concludes his account of the battle on Lake Erie, September, 1813.

The splendor of this victory dazzles the imagination. It was gained by a portion of an inferior squadron over another every way superior, and throughout the action concentrated in its force. It was gained, more eminently than any other naval victory, by the exertions of one individual, a young man of twenty-seven, who had never beheld a naval engagement. He had dashed boldly into action with the Lawrence, counting upon the support of those immediately around him, and trusting that the rear of his line would soon be able to close up to his support. Deserted by the Niagara, which was to have encountered the second of the enemy's ships, and sustained only by the Caledonia, the Ariel, and the Scorpion, we find him resisting for more than two hours the whole of the British squadron. Finding, at length, his vessel cut to pieces, his guns dismounted, means of resistance destroyed, and nearly the whole of his brave crew lying dead or wounded around him, instead of yielding the day, after having done everything that depended upon him to win it, and leaving the responsibility of defeat to the commander of the Niagara, he thought only of using the means that remained to him still to secure a victory. Passing from the Lawrence under the enemy's fire; saved from death, as if miraculously, by the protecting genius of his country, he reached the Niagara, and, by an evolution unsurpassed for genius and hardihood, bore down upon the enemy, and dashed with his fresh and uninjured vessel through the enemy's line. It was thus that the battle of Erie was won, not merely by the genius and inspiration, but eminently by the exertions of one man. Nelson was indeed a splendid hero, the subject, in no slight degree, of Perry's admiration. But it may with truth be said, that no one of his many brilliant victories was opposed by so many difficulties, or effected by so many resources of genius. They were usually effected by single combined movements in execution of previously-concerted plans. Nelson would go into action at the head of his line, be gallantly supported by his subordinate chiefs, and the steady display of British courage and superior skill would give him the victory. In Perry's victory, the original intention of engaging the enemy in line, vessel to vessel, as designated in previous orders, had failed, from the Niagara keeping back and abstaining from the encounter of her proper antagonist, which was thus left free to aid in overpowering the Lawrence. In suffering destruction, she had fought with desperate obstinacy, and dealt many and formidable blows to her numerous assailants. Overcome at last and abandoned to her fate, Perry made a new arrangement of his remaining resources, and snatched from the enemy a victory which he had already claimed with exulting cheers for his own. Nelson had triumphed over Frenchmen and Spaniards; Perry was called upon to meet the conquerors of these, led, moreover, by a veteran formed in the school of Nelson, and bearing upon his person the marks of Nelson's greatest victory. The battle of Trafalgar was won by the whole British fleet over a part of that of the allies; the battle of Lake Erie was won over the whole British squadron by only a part of ours.

NAVAL REMINISCENCE.

Between the time of the declaration of the late war with Great Britain, June, 1810, and the proclamation of peace, February 18, 1812, there were fifteen naval actions between British and American vessels-of-war. Of the commanders who had immediate command in these battles, Decatur, Bainbridge, Lawrence, Burrows, Blakeley, Perry, McDonough, and Allen have since died; and Hull, Porter, Jones, Warrington, Stewart, Elliot, Turner, Champlin, and Cassin, yet survive. In eleven battles fought during the war by single ships, the Americans conquered; in four only the British triumphed—two of which were by single ships, viz: Chesapeake, of 47 guns, taken by the Shannon, 52; and the Argus, 16 guns, taken by the Pelican, 20. The other two British captures were two to one, and four to one against us. During the war, there were captured from the British, on the ocean, three frigates, and fifteen sloops-of-war, and smaller ships; and on the lakes, thirteen, several of them frigates and sloops. The whole number captured by the Americans were thirty-one. The British took from us, and destroyed at navy yards, but twenty-three armed vessels, viz: three frigates (Chesapeake, President, and Essex), twelve sloops and gun-brigs, and eight schooners.

ELIZABETHTOWN, NEW JERSEY.

We copy from the Elizabethtown (N. J.) Journal, the following brief historical notice of that place. We have in the hands of the engraver, a handsome and accurate view of the town and sheet of water before it, which we intended to publish in this present number, but we cannot get it done in time, and hence we are obliged, though reluctantly, to omit it.

Recently the public have become more deeply impressed with the importance of preserving the records of our past history, rescuing from oblivion many facts known only to the living who must soon pass from existence, and thus lay the foundation for the labors of future historians, who can trace with delight the distinguished progress of an illustrious people. The formation of historical societies must shed much light upon periods which would otherwise be obscure, and as a consequence should receive a large share of the consideration and protection of the public. These observations have been called out by a sermon which has recently been published, "*containing a general History of the Parish of Westfield, preached January 1st*, 1839, *in the Presbyterian Church of that place, by* James M. Huntting, *Pastor.*" The pastor, amid his other avocations, has found time to collect from hearsay and other sources, many interesting and curious incidents, which without such care would otherwise have been forgotten, and which must be of deep interest to very many of his charge.

The indefatigable pastor of the first Presbyterian church, of our own town, we understand has been engaged in the same laudable enterprise, and has collected copious materials with reference to its early history. Elizabeth-Town was once the most important place in the colony of New Jersey, and its early history is full of interest to the annalist, and is marked by numerous incidents of a romantic character.

We extract the following from Mr. Huntting's sermon:—

"The congregation embraces an extent of country about five miles square, and in the middle of it stands our house of worship; the members are scattered very evenly over the entire surface; there being no part of it where a dwelling is not near, nor anywhere are many close together. The number of families at present within our bounds, is about 230—containing about 1150 individuals, and there has been but little variation within the remembrance of our oldest people—though the neighborhoods have changed, some containing less now, and others more than formerly.

"The Indians owned and occupied this place when America was discovered. Of them a gentleman named Augustus Harman, probably of Dutch descent, purchased the tract, as appears from his deed dated in the year 1651. Other Dutch proprietors are named in ancient deeds, but it does not appear that they became residents of the place.

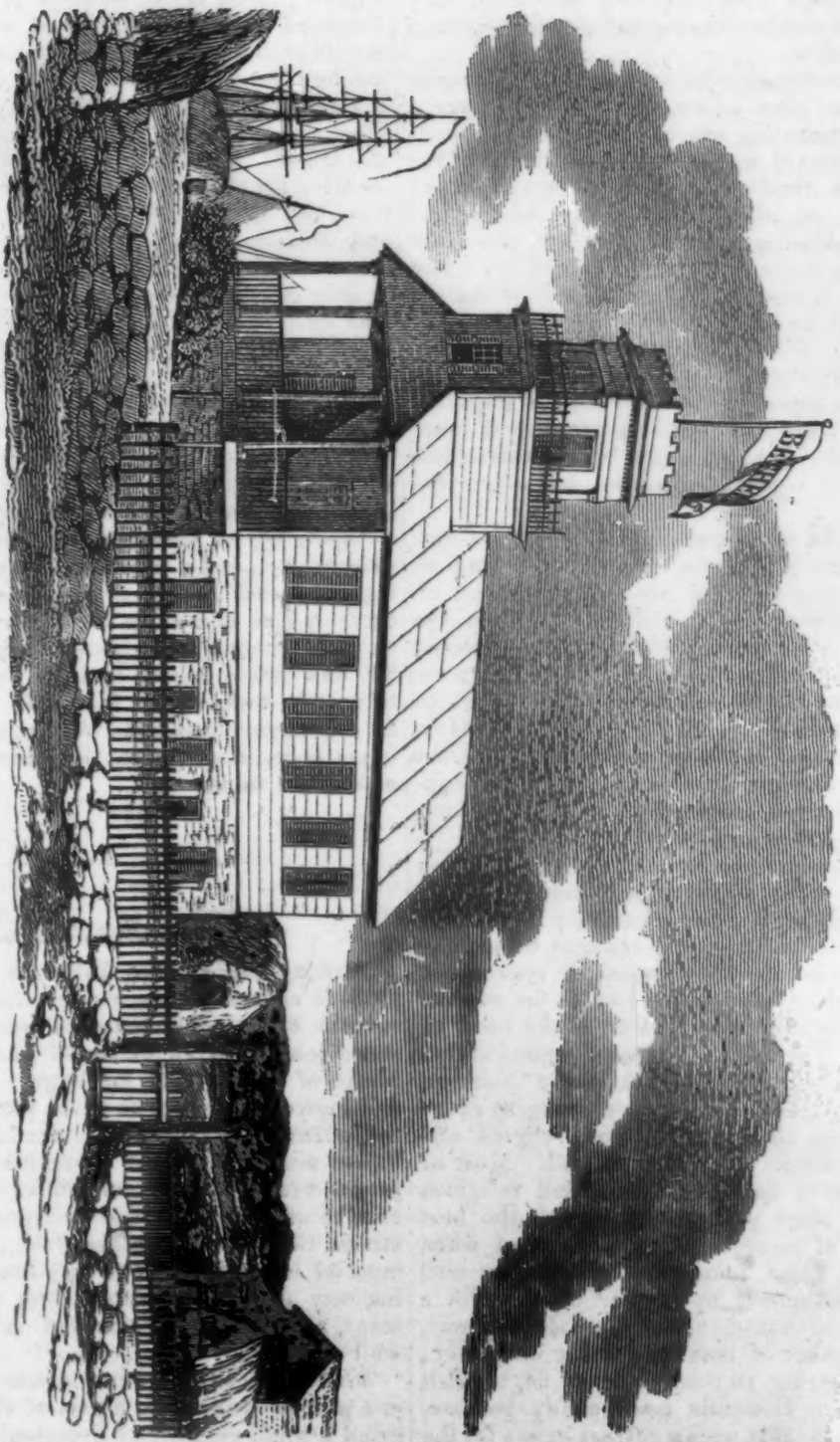
"This parish and township, like several others around us, were originally included in what was called *Elizabeth-Town* or the *Elizabeth-Town Tract.*

In the year 1664, James, the duke of York, obtained from his brother, Charles II., king of England, a grant for an extensive tract of land in this country, reaching from the western banks of the Connecticut to the eastern shore of the river Delaware, including of course this place and state. He soon conveyed what is now the state of New Jersey, to Lord Berkley and Sir George Carteret of English descent. After this conveyance, Col. Richard Nicholls, who was acting as governor for the duke of York, over his territory in America, at one time while ignorant of the grant to Berkley and Carteret, formed the design of colonizing the district which they had acquired, and for this purpose granted licenses to various persons to make purchases of lands from the original inhabitants. The effect was that three small townships were speedily formed in the eastern part of the territory by emigrants chiefly from Long Island who laid the foundation of Elizabethtown, Woodbridge, and Piscataway. Thus it seems that this place, and the surrounding places also, were at that time claimed by three parties as owners, viz: Mr. Harman, Messrs. Berkley and Carteret, and Col. Nicholls's emigrants from Long Island. Col. Nicholls, however, on learning of the duke's grant, resigned up the territory as its governor in 1665 to Sir Philip Carteret, who arrived in August of that year, with thirty settlers from England, and established themselves at Elizabethtown.

* * * * * * * *

The sum paid for the Elizabethtown tract was 36*l.* 14*s.* sterling, which, as subsequent surveys proved, was about *one mill an acre*, or *ten acres for a cent.* And this was not paid in money; the articles given were *twenty fathoms of trading cloth, two made coats, two guns, two kettles, ten bars of lead, twenty handfulls of powder, and four hundred fathoms of white and two hundred of black wampum*, to be paid in one year from the day of entry by the grantees upon the lands. The extent of this broad tract, so cheaply purchased, may be learned from the following description of it. It is described as one parcel of land, bounded on the south by a river commonly called the Raritan, on the east by a river which parts Staten Island from the main, and to run northward to Arthur Kull's bay, till we come to the first river which sets out westward out of the river aforesaid, and to run westward into the country twice the length that it is broad from the north to the south of the aforesaid bounds.

The parties to the deed from the Indians, were Mattano, Manawarne and Conascomon, of Staten Island, and John Bailey, Daniel Denton, and Luke Watson. Mattano was the only one of the Indians who signed the deed, though the others are mentioned as concerned with him; he signed it by a ~~~ waved line as his mark, since he could not write. He seems to have had little regard to justice, or little acquaintance with business, since he had conveyed the same tract away, but thirteen years before, to Mr. Harman, of whom mention has been made. How Mr. Harman became dispossessed of it, does not appear."



Seamen's Chapel, Honolulu, Sandwich Islands.

SEAMEN'S CHAPEL, HONOLULU, SANDWICH ISLANDS.

When the United States frigate Potomac visited the Sandwich Islands, in 1832, the foreign residents invited the officers to an entertainment in the country; and such are the mildness of the climate, the fertility of the soil, the varied productions of nature, the sublimity of the scenery, and the character and condition of the people, that the occasion has been described in glowing terms by some of the spectators on the occasion. Passing up a narrow ravine, the officers and their attendants, with their resident friends, in a long cavalcade, proceeded between the luxuriant gardens which line the path, and adorn the acclivities on either side; then, moving alternately between groves and clusters of trees, and over open spaces which commanded a more extensive view of the scenery around, they reached an elevated spot, far upon an eminence which looks out upon the ocean, where they found the branches of trees festooned with flags and adorned with flowers, and the ground partly covered with tables provided with an inviting repast. The peace and stillness which pervaded the scene, the exhilarating air, the novelties of nature around them, and recollection of the part of the world in

which they were thus hospitably received, were calculated to excite pleasing and peculiar feelings on the occasion.

From a gentleman who once gave us a glowing description of that scene, we heard, however, a still more interesting one of a pedestrian excursion he afterward made into the interior of the island, at the time of a general assemblage and examination of all the schools. Adults and children, embracing almost every age, were met in cheerful groups, proceeding toward the place of meeting, in neat apparel, prepared for the exercises which he afterward witnessed with peculiar interest. We presume that most of our readers would, in like manner, take greater interest in witnessing the moral and intellectual improvements which have been recently introduced there, than in all the beauties with which nature has adorned those regions, numerous and attractive as they are.

What can be more painful to a person of any just views, and possessing intelligence, than to contemplate the sad and dreadful condition of ignorant and unprotected tribes, exposed to the influence of such unprincipled men as civilized countries too often send out, when, free from responsibility to law and society, they are left to treat them according to their pleasure! How gratifying, on the contrary, when the exposures are lessened on both sides; and, while the weaker party is secured from evil, the stronger is not tempted to oppress or corrupt.

The former condition was that of the Sandwich islanders for many years: the latter state they now in a considerable degree enjoy; and one of the pleasing evidences of the changes which first salute the eye of the traveller, as he approaches the shore of their principal seaport, is the modest spire of the building represented at the head of this article. The sailor is at once reminded that those islands have been retrieved from their barbarity, transformed from scenes alluring to every vice, and made the abode of the religion and many of the habits of his native land. Most of our seamen have had some moral and religious education in their younger days; and the best associations of memory being awakened when farthest from home, must exert salutary as well as pleasing influences upon their mind. Not a few of our merchantmen, and our ships-of-war, contain a number of men of sterling character; and how cheering to them it must be, to visit such a place as Honolulu has recently become, or even to know that such a retreat exists for the navigator, in the midst of the almost boundless waves of the Pacific ocean!

The position of the islands, and the advantages of that port, render it a convenient place for many ships of different nations; and it is greatly resorted to by American whalemen, as well as by many other vessels sailing between the continents. The American Seamen's Friend society erected this chapel there in the year 1833; and have a chaplain stationed there, whose attention is devoted to the class of visitants.

The materials for this building, says the Sailor's Magazine, were purchased, in part, in the United States, in the summer of 1831, and were freighted to the island, free of expense, through the liberality of several ship-owners and ship-masters in New London and Norwich. The same liberality furnished the chaplain, Rev. John Diell, and his lady, with a gratuitous passage to the island. On reaching the island, an eligible location for the site of the chapel was procured from the government, after some little delay; and measures were taken to proceed with the erection of the building. It was commenced in July and dedicated to the service of Almighty God on the 24th of November, 1833. The total cost of the house, independent of the materials carried out, was a little above $2,600.

The building was 48 feet by 30. The basement is of stone; the walls eleven feet high; and it contains two public reading-rooms, each 27 feet by 15; one for masters and officers, the other for seamen, and a room for the seamen's library, a depository of bibles, tracts, temperance publications, &c., and a marine museum. The reading-room and library are open every day, and there is free admission to all who feel disposed to visit them. The library contains between 800 and 900 volumes; and the books are loaned to vessels touching at Honolulu, and expecting to call again during the voyage. The museum is yet in its infancy; but it is now increasing in extent and value.

INK MANUFACTURE.

Shining Black Ink. Take two ounces of nut-galls in coarse powder; one ounce of logwood in thin chips; one ounce of sulphate of iron, three fourths of an ounce of gum arabic; one-fourth of an ounce of loaf sugar. Boil the galls and logwood together in three pints of water, till the quantity is reduced to one half. Then the liquor must be stained through a flannel into a proper vessel and the remainder of the ingredients be added to it. The mixture is then to be stirred till the whole is dissolved; after which it must be left at rest for twenty-four hours. The ink may then be decanted from the gross sediment, and must be preserved in a glass bottle well corked.

Blue Ink. Dissolve one ounce of gum-arabic in a pint of water. In a part of this gum-water, grind a small quantity of Prussian blue; you may thus bring it to any depth of color you choose. Indigo will answer this purpose very well, but it is not so fine a color, nor will it remain suspended so uniformly in the water.

Red Ink. In the abovementioned gum-water, grind very fine, three parts of vermillion with one of lake or carmine. This is a very perfect color, but may require to be shaken up occasionally. To make the common red ink, such as is used by bookbinders for ruling, &c., infuse half a pound of rasped Brazil-wood for two or three days in a pint of vinegar; then filter or strain it, and add one ounce of gum-arabic and one ounce of alum.

It may afterward be diluted occasionally with water.

Yellow Ink. Steep one ounce of tumeric, in powder, in half a gill of alcohol; let it rest twenty-four hours, and then add an equal quantity of water; throw the whole on a cloth, and express the colored liquor, which mix with gum-water. Rum or other spirits may be substituted in the place of alcohol. A solution of gamboge in water, writes a full yellow, but comes far short of tumeric in brightness.

Green Ink. To the tincture of tumeric, prepared as above, add a little Prussian blue. A variety of teints may be formed, by varying the proportions of these two ingredients, and no artificial color can excel it in beauty.

Purple Ink. To the blue ink, as described above, add some finely ground lake; or instead of this the expressed juice of the deepest colored beets may be substituted, but it is more liable to fade. With either of these a variety of teints may be formed, by varying the proportions.

FARMERS' DEPARTMENT.

CARE OF HORSES.

THERE are a great many farmers who take but poor care of their horses in the winter season. In the short days they have water before dark, and then have to go without until nine or ten o'clock the next morning, or if they have water early in the morning, they will not usually drink, as their time of thirst is past. Horses seldom refuse water after they have eaten their evening meal, though if they do not have it then, they will usually drink but little the next morning until after eating. So if a horse will not drink early in the morning it is no indication that he has not been thirsty the previous evening.

We have been particular in our observations on this point. We have turned a horse out to drink at nine or ten o'clock in the evening, and seldom known him to fail of drinking heartily. Then for experiment we omitted to give him water at night, but attended to it in the morning before he was fed, and he would seldom drink. If it be best for animals to have free access to water at all times, as is generally allowed, then they ought surely to have a supply immediately after eating, when they are usually thirsty: though the superficial observer who finds that they will not drink early in the morning may think that all has been well.

There is not a man probably, who has not at times, been very much in want of drink, and yet, without being able to obtain it, his thirst has gradually abated. In this case the juices from other parts of the body are, in a measure, put in requisition to supply moisture where it is wanted, so by an equalness the thirst is abated or done away, but there is a deficiency of moisture in the system—a drought less severe but more extensive, which, if experienced daily, will prove unfavorable to health and strength; and in animals it will injure the growth of the young and operate against the fine, healthy condition of every creature. They must have water when they need it or they will not drink; like men, they do not eat and drink according to fashion and custom.

Some farmers will use their horses till they are warm and sweaty, and then put them up, perhaps in a cold barn, without covering them with anything to keep them warm; this evil is often greatly increased by allowing the horses to drink freely of water, while warm, in order to save the trouble of watering them after they have stood till cool; a great many horses suffer in this way, and some are ruined. For a man or beast to be inactive and exposed to cold after exercise and perspiration, is very destructive to health and will destroy the strongest constitutions. Every man knows the importance of guarding himself against exposure to cold after perspiration, and how a drink of cold water, in this state, will send a chill through the whole frame. Though a man is not like a horse, he resembles him in his ability to do a great deal of labor with proper management, and in his liability to disease if his tender frame is not guarded with care.

It was observed in the Farmer, some months ago, that it was better for a horse to have a place in the winter where he could stand upon the manure, and walk round at ease, than to be confined to a stall and stand on a hard floor. But in this case, as the horse will generally stand in one place to eat, the manure will accumulate under his hind feet so that he will stand uneasy, unless it be levelled frequently so that it will be as high or higher under his fore feet.

Currying horses is very much neglected by some farmers. This operation is very important, as it contributes both to the pleasure and health of the animal. In some cases this business is hardly attended to, being performed only a few times in the course of the winter.

Many a farmer's horse that is now stupid and lazy, and of a miserable appearance, would, under the care of a good hostler, without extra keeping, become so changed in his appearance and spirits, in a few months, though performing the same amount of labor, that his owner would hardly know him. Yankee Farmer.

PREPARATION OF HOT-BEDS.

THOSE who have hot-beds, or are intending to provide one for themselves (and we advise every farmer or mechanic, who has a garden, to construct one), should see that his ashes are made and his frame for their reception provided. Arrangements should also be made for a sufficient supply of horse manure for the heating process. Farmers who use abundance of litter in their stables, frequently find it in too great a proportion to the droppings to make good beds, as we have found by our own experience; and it is therefore necessary that the quality of the manure intended to be used, should now be seen to. We

can assure our friends, that the successive crops of radishes, lettuces, and cucumbers, that may be brought forward in a forcing bed, long before they can be produced in the open air, will be found most acceptable after our long winters.

AGRICULTURAL STATISTICS.

According to the returns of the marshals, by whom the late census was taken, the state of New York is behind Pennsylvania in the production of wheat, to the amount of about 2,000,000 bushels annually; while it excels Pennsylvania in the production of rye over 3,000,000 bushels, of Indian corn 2,500,000 bushels, of oats over 2,000,000 bushels, of buckwheat 300,000 bushels, of barley 2,300,000, of potatoes 21,000,000 bushels, wool nearly 1,000,000 pounds, hay nearly 2,000,000 tuns, sugar over 8,000,000 pounds, and of products of the dairy over $8,000,000. In the production of wheat, Ohio exceeds Pennsylvania about 3,000,000 bushels, while Virginia is but about 1 1-2 millions bushels behind New York in that article. In Indian corn, Tennessee takes the lead of all the states, producing 42 1-2 millions of bushels yearly, North Carolina 34 1-2 millions of bushels, Virginia about 34 millions of bushels, Illinois 28 millions, Michigan 22 millions, Alabama 18 millions, Missouri 15 millions, Pennsylvania 13 1-2 millions, and New York 10 millions. Of neat cattle, New York possesses 2,642,438, Pennsylvania 146,418, Ohio 1,008,313. Of sheep, New York has 5,381,225, Pennsylvania 3,396,431, Ohio 1,964,957, Vermont 1,393,420, Virginia 1,280,736. In the products of the orchard, New York and Vermont lead the other states, nearly two to one—the former being to the amount $1,732,357, the latter $1,109,287. In cotton, Mississippi bears the palm, producing yearly 289,838,818 pounds, Alabama 240,379,669 pounds, South Carolina 148,907,880 pounds, Georgia 134,322,755 pounds, Louisiana 87,640,185 pounds, Virginia 10,767,451 pounds. Of tobacco, Maryland produces 19,000,000 pounds, Virginia 14,000,000 pounds, Ohio 6,000,000 pounds, Tennessee 26,700,000 pounds, Missouri 8,500,000 pounds, and Indiana nearly 2,000,000 pounds.

CLOVER AMONG CORN.

Allen Putnam, the new editor of the New England Farmer, recommends the practice of sowing clover-seed among corn, from personal experience, as being more certain of vegetation, the crop more free from weeds the first year, grain-stalks easier to mow, equally abundant, and better in quality; and the young plants are not overshadowed by grain early in summer, nor too much exposed to the sun after harvest. The mode is, to make no hill, sow at mid-summer and cover with a one-horse harrow, and make all smooth with a hoe. Cut the corn closely to the ground. If necessary, the surface may be cleared with great expedition while the ground is frozen in winter, by means of a common hand hoe.

THE FORESTS OF BRAZIL.

"The infinite variety of teints which those woods display give them an aspect wholly different from those of Europe. Each of the lofty sons of the forest has an effect distinct from that of the rest. The brilliant white of the silver tree, the brown head of the mangoa, the purple flowers of the Brazil wood, the yellow laburnums, the deep red fungus, and the carmine-colored lichens, which invest the trunks and the bark, all mingle in brilliant confusion, forming groups, finely contrasted and diversified.

"The gigantic height of the palms, with their varying crowns, give these forests an incomparable majesty. All these are interwoven with a network of creeping and climbing plants, so close as to form around the large trees a verdant wall, which the eye is unable to penetrate; and many of the flowering species, that climb up the trunks, spread forth and present the appearance of parterres hanging in the air.

"These woods are not a silent scene, unless during the deepest heat of noon, but are crowded and rendered vocal by the greatest variety of the animal tribes.

"Birds of the most singular forms, and most superb plumage, flutter through the bushes.

"The toucan rattles his large hollow bill, the busy orioles creep out of their long pendent nests; the amorous thrush, the chattering manikin, the full tones of the nightingale, amuse the hunter; while the humming birds, rivalling in lustre diamonds, emeralds, and sapphires, hover round the brightest flowers; myriads of the most brilliant beetles buzz in the air; and the gayest butterflies, rivalling in splendor the colors of the rainbow, flutter from flower to flower.

"Meantime the beautiful, but sometimes dangerous race of lizards and serpents, exceeding in splendor the enamel of the flowers, glide out of the leaves and hollows of the trees. Troops of squirrels and monkeys leap from bough to bough, and large bodies of ants issuing from their nests creep along the ground. It concerns us here to remark, that these immense forests are rich in timber of every description for use and ornament, suited either for carpentry, ship-building, dying, or furniture. That kind especially called Brazil wood, is particularly celebrated for the beautiful red die which it produces."

SCLAVONIC LITERATURE.

The Sclavonic literature is under the decided and undisguised protection of Russia, who rewards with both gold and favor every Sclave writer of any reputation, let him inhabit what country he may; and such is said to be the case in the instance of a Sclavonic protestant ecclesiastic of Pesth, renowned through Hungary for his great knowledge of Sclave literature and fanatic nationalism. The Poles alone, notwithstanding their Sclavonic origin, are universally anti-Russian; but this fact must be so obvious as scarcely to require mention.

St. Peter curing the Cripple.

THE CARTOONS OF RAFFAELLE.

No. VII.—ST. PETER CURING THE CRIPPLE.

THE subject of the cartoon before us, St. Peter healing a cripple, or, as it is sometimes called, the Beautiful Gate, is less diversified with action and incidents than that of Paul and Barnabas; but the scene in which the event takes place is filled with such a range of character and picturesque accompaniments, as to render it one of the most striking and effective of all the cartoons.

The apostles Peter and John were entering the temple at Jerusalem by the "gate which was called Beautiful;" the cripple, who was brought there daily, and had been lame from his birth, solicited alms as they passed. "Then Peter said, Silver and gold have I none, but such as I have, I give unto thee: in the name of Jesus Christ of Nazareth, rise up and walk! And he took him by the right hand, and lifted him up, and immediately his feet and ankle-bones received strength; and he, leaping up, stood and walked, and entered with them into the temple, walking and leaping, and praising God."

We may conclude, as the epithet "beautiful" was applied to the vestibule in which this event took place, that it was remarkable for architectural magnificence. Raffaelle, accordingly, has selected an order of columns of the most ornate splendor; spiral, and embellished with arabesques in bas-relief. These pillars are ranged four deep, a plan which gives fulness and richness of effect, and at the same time leaves depth and space, and a sufficient atmosphere for the figures to move and breathe freely in—a point which even in his most crowded compositions Raffaelle is always careful to secure. The apostles Peter and John occupy the middle compartment, that, of course, which fronts the eye of the spectator; and before them is the cripple, whose hand the apostle has taken. The action of St. Peter is simple and dignified; it exhibits, however, nothing of the lofty demeanor which may be supposed to characterize power merely human; neither is there in it a trace of doubt, nor of the anxiety and eager interest which may be felt by a physician while watching the progress of an extraordinary cure. St. Peter is fully conscious that he wields infallible power, but that he holds it as the organ of Omnipotence. St. John regards the cripple with an air of the most mild and gracious benevolence. Expression is dispersed and discriminated among the surrounding figures with Raffaelle's usual variety and power. Curiosity, faith, and skepticism, are all manifested. The old man who leans on crutches, and presses forward from behind the column, evinces the most absolute belief in the divine power vested in the apostles, and seems to implore its exercise in his own behalf: the soldier on the extreme right participates in this confidence; while the countenance of the man next him, who lays his finger on his lip, bears the strongest indications of scorn and incredulity. An amiable mother diversifies this group; her attention is absorbed by her infant, and she gives but a casual glance at the transactions which are passing round her; her beautiful head and that of the infant are admirably contrasted by the personification of sturdy deformity exhibited in the cripple who is placed before her; he regards the apostles eagerly; half jealous, apparently, of whatever assistance is about to be bestowed on his fellow, and impatient to partake in it.

The figures on the extreme left occupy the outer portico, and are not, consequently, within range of the principal action. The group of the young woman who carries a basket on her head, and leads a boy bearing doves, is one of the loveliest creations in art. The bright open sky, seen be-

tween the interstices of the columns, harmonizes with the lightness, cheerfulness, and happy expression of those figures. In the compartment where the miracle is taking place there is a similar correspondence of effect with sentiment. The subdued light of lamps burning in the depths of the recess accords well with the reverential feeling excited by the sacred transaction.

BLANNERHASSET'S ISLAND.

We do not know to whom to accord the authorship of the following sketch of the unfortunate Blannerhasset. It is extracted from a western paper.

"A few miles below Marietta, we passed Blannerhasset's Island. We ran under the lee of it some distance, but the thick wood of the river obstructs any view of the interior. We saw no trace of the beautiful mansion of Blannerhasset, except a chimney at the north end of the island, which was all that escaped the fire in which that dwelling had been consumed. I hear, however, that the beautiful shrubbery still lives on the island, which was planted by Blannerhasset, and that many of the walks he laid out are now open.

"Blannerhasset was one of the Irish patriots who were compelled to flee from Ireland after their attempt to liberate themselves from the thraldom of England. He was possessed of a large amount of property, the greater part of which he was fortunate enough to render available in money before his departure. Disgusted with the corruption of courts and turmoil of politics, he sought retirement in the western wilderness, on a beautiful island in the Ohio, then on the borders of civilization. He built a princely mansion on it, and embellished it in a most costly manner. Situated on the borders of Virginia, Kentucky and Ohio, he had access to very refined society, with which it was his custom constantly to intermingle and exchange civilities.

"His hospitality was unbounded, and dealt out as it was by his own chivalric courtesy and the grace of his beautiful wife, his island became the general resort for all the country around, and it is even yet celebrated for the splendid revelries and entertainments of which it was the scene. Blannerhasset was a fine sample of a polished Irish gentleman, and rendered himself a very affectionate object of regard by the amenity of his manners and disposition.

"His lady was a woman of rare beauty and accomplishments, which were heightened by a pure and unimpeachable character. She reigned the queen of this beautiful kingdom of taste and refinement, which Blannerhasset had created on the Ohio; and according to cotemporary accounts, she deported herself with a grace and dignity that might have become a throne. She was a woman of high spirit and ambition, and when Burr, aware of her commanding influence over her husband, confidently intrusted her with his plans of Mexican dominion, she was fired with the boldness and intrepidity of his enterprise, and immediately determined to engage her husband as a confederate. Blannerhasset was a man of ductile temper and was easily induced by the dazzling representations of prospective glory and honor which his ambitious wife set before him to become a participator with Burr! He was moreover a liberalist of the French school, of which Aaron Burr was well aware. The gorgeous representation which Burr held up to him of Mexico redeemed from tyranny by their united efforts, fired his soul, as he entered with enthusiasm into what he believed an honorable and humane undertaking.

"When once pledged to Burr, under the mastering genius of his wife, he actively engaged in enlisting men, building boats, and preparing the essentials of his expedition. Many of the most respectable citizens of the neighboring county were connected with the affair, and deluded in the same manner as Blannerhasset. The entertainments on the island were broken up, and its shores echoed only to the muffled oar of the conspirators, as they crossed from the adjacent bank, or to the tramp of bold adventurers, as they congregated on the beach to resolve and discuss their plans of Mexican redemption. A large number of flat boats had been built on the Muskingum, and sent over to the island, and everything was ripe for embarkation, when the plot was discovered to the public authorities by one of the accomplices. Blannerhasset was *instantly* deserted by his followers, and left alone to brunt the scorn. Timothy Buel, commander of the militia, with a small detachment went over to arrest Blannerhasset. He had hardly set foot on the island, before he was met by Mrs. Blannerhasset, whose spirit seemed to rise with the increasing desperation of her fortunes. She had seen the party coming, and snatching up a pair of her husband's pistols, she ran from the house to meet them. Just as the militia major stepped out of the boat, she seized him by the shoulder, and thrusting him back, presented two formidable pistols full in his face, cocked and primed; commanding him in the most positive tone not to advance, 'one step forward and I will send you into eternity; it is easier for me to do than to say it,' were her words, according to my narrator, who was one of the party. Her splendid figure drawn up to its full height, her eye fixed with a strong and determined gaze, her hands clenching firmly the pistols which she held at arm's length, told the militia major, in language not to be mistaken, the terms on which he might advance. The old fellow quailed and trembled before the courageous woman, and was forced to turn without his victim. Blannerhasset made his escape, and is now, or was a few years since, living with his wife in poverty in France."*

A wit's a feather, and a chief's a rod—
An honest man's the noblest work of God.

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* Blannerhasset is still living for aught we know; but it is a mistaken though common opinion, that he is poor. After his unfortunate connexion with Burr, he inherited a handsome fortune on the death of a near relative.

MISCELLANY.

HABITS OF THE GREENLANDERS.

Like most other savage nations, among whom the gratification of the mere animal propensities is the only inducement to action, the Greenlanders are indolent and listless. Though good-humored, friendly, and sociable, they are seldom lively or inclined to indulge in mirth, and can scarcely be roused from their apathy either by curiosity or passion. They are accordingly little disposed to quarrel or fight; blows or even angry words are seldom exchanged, and they live in great harmony, more influenced by kindness than by harsh treatment. Changeable to an extreme degree, their most favorite projects are resigned on the smallest unexpected obstacle. Endowed with little reach or extent of intellect, their thoughts and cares are almost entirely confined to the present; and they spend their limited stock of provisions without reflecting on future wants, or waste the best season of the year in hunting raindeer, for skins to gratify the vanity of their wives and daughters. When not compelled by absolute necessity, they pass whole days in sleep, or sit thoughtful and dejected on some lofty eminence watching the changes of the sea and sky, or forecasting the toils and dangers of the chase. Vanity, both personal and national, seems their strongest passion: unable to estimate the advantages of others, they esteem no people equal to themselves, no title higher than to be a Greenlander. The most flattering compliment they can pay to a stranger is to say, "He is almost as well bred as we;" or, "He begins to be a man," or "Innuit," that is a Greenlander. A favorite amusement among them is to exhibit caricatured imitations of the Kablunaet, or foreigners. Even those who have been in Denmark, prefer their naked steril rocks to every other country, and will hardly confess that Europeans are so happy as they; complaining that at Copenhagen there is not heaven enough, and no reasonable degree of cold.

FUNERALS IN HUNGARY.

The interment of a respectable individual is frequently attended by two hundred persons, walking in double file through the streets from the residence of the dead to the cemetery which is to receive his remains; the men move on first, immediately behind the hearse; and then the women; only the nearest relatives wear mourning, or such of the party as, possessing black garments, pay the family of the deceased the compliment of appearing in them on the occasion; and this large assemblage is collected by the principal undertaker, who is summoned directly when life is extinct, by the friends of the dead person; and who having received his instructions, appears in a crape scarf, which is fastened under one arm with a bunch of artificial roses, and carrying a wand wreathed with crape in his hand, to the end of which is affixed an orange or a lemon, at the house of all such individuals as are desired to attend the funeral.

SPECIMENS OF GERMAN GENIUS.

According to the "German Pedagogic Magazine," there died a few years ago, in Suabia, a schoolmaster, who for fifty-one years had superintended an institution with old-fashioned severity. From averages inferred by means of recorded observations, one of the ushers had calculated that in the course of his exertions, he had given 911,500 canings, 124,000 floggings, 209,000 custodes, 136,000 tips with the ruler, 10,200 boxes on the ear, and 22,700 tasks to be got by heart. It was farther calculated that he had made 700 stand on peas, 600 kneel on a sharp edge of wood, 5,000 wear the fool's cap, and 1,708 hold the rod.

ARTESIAN WELLS.

The city of Paris has at length succeeded in procuring water from an Artesian well, which has for several years been in progress at Grenville, at an expense of 160,000 francs. The boring instrument, after having reached the enormous depth of 560 metres (1837 English feet), reached the water, which immediately sprung up in abundance to the top of the bore. This operation has resolved a highly interesting geological problem, and proves that a body of water exists under the green chalk strata which forms the bed of the environs of Paris.

MALLEABLE GLASS.

Pliny, Petronius, Isidorus, and others, report that an artificer was presented to Tiberius who had invented a malleable glass, which being cast on the ground, was bent, but not broken, and being taken up by the same artificer, was with his hammer brought to the former form and beauty. His reward, beside the wonder and astonishment of the beholders, was that which precious things often procure their owners; for the emperor, asking whether any other knew this mystery? this being denied, he caused his head (the only workhouse of this secret) to be smote off, lest gold and silver should give place to art.

ANOTHER "GREAT UNKNOWN."

Among the fossils collected by Mr. Koch in the great west, the most remarkable specimen is a head of an animal which Mr. Koch calls a nondescript, and considers to have been from four to six times the size of an elephant. The head shows the central oblong amorphous part, which measures six feet in length by two or three in width. It is furnished with enormous tusks, eleven and three twelfths feet long from their roots, and nine or ten inches in diameter, one foot and three inches of their length being inserted in their sockets. These tusks are semi-circular, and stand out horizontally, with the concavity backward. Thus placed they are fifteen feet in a straight line, from the tip of one to the tip of the other.

He who a *watch* would wear, two things must do,
Pocket his *watch*, and *watch* his pockets too.

LITERARY NOTICES.

THE Messrs. Harper have recently added several exceedingly valuable works to their "Family Library," which series now numbers about one hundred and thirty volumes, embracing almost every subject in the range of science, philosophy, history, biography, natural history, &c., &c. Among those recently added to the series, are the following:—

Numbers CXIX.-'XX. *History of the United States*, by Selma Hale. The author of these two volumes has been long favorably known to the public, as the writer of the best abridgement of the history of our country for the use of schools, which has yet appeared. It is extensively, if not universally, used in all the states in the Union, as an introductory to the more enlarged study of our national history. The work before us is more extended in all its parts, and embraces a record of the most important events in the history of our confederacy, from the first settlement of the states as colonies, to the close of President Madison's administration, in 1817. The author expresses a hope, that he may be enabled to present the public with another volume, ere long, that shall continue the narrative till the present time. This may be done with profit, when the prejudices of party shall permit truth to have free course, for much of our history since 1817, is a history of party warfare.

Numbers CXXI. 'XXII. *Life of Oliver Goldsmith*, by Washington Irving. These two volumes embrace a biographical sketch of the purest of modern writers, and judicious selections from his best essays, poems, tales, &c. No one could better delineate the character of Goldsmith, than the author of this work; for the subject of his memoir is his prototype in the field of literature. Such is the similarity of their style, that the best English critics have denominated Irving the "Goldsmith of America." We are glad to see our best writers coming forward and lending their aid in the dissemination of knowledge, through such popular channels as the Family and School District Libraries. They can do a vast deal in this way toward establishing a truly national literature for this country, of which we are yet lamentably deficient. Those who wish to possess the purest pearls of Goldsmith's intellectual casket, should purchase these volumes.

Numbers CXXIII.-'XXIV. *Lives of distinguished men of modern Times.* These volumes are compiled from a more extensive series, published by the British society for the Diffusion of Useful Knowledge, entitled the "Gallery of Portraits." They embrace memoirs of forty-nine of the most celebrated men of modern times. Better books than the biographies of truly great and good men, cannot be put into the hands of the young. They are like so many bright examples after which to pattern—so many strong incentives to good, to noble aspirations, and to efforts for attaining a high rank in the standard of real worth. These volumes should be in the hands of every young man. The same remark may apply to—

Number CXXV. *The life of Dewitt Clinton*, by James Renwick LL. D. Professor Renwick was favored with the use of the manuscript papers of this great statesman, and various other authentic materials, by which he was enabled to give us the present excellent memoir. The name of Clinton is not only identified with the best interests of New York, but it is venerated throughout the Union by all parties, now that the turmoil of political strife in which he was necessarily engaged, has passed away. As a *man* in the broadest sense, physical, intellectual and moral, few if any ever surpassed him; and it is both pleasant and profitable to follow him by means of this memoir, through the many avenues of his active life.

Numbers CXXVI.-'VII. *Life of Commodore Perry*, by Lieut. A. S. Mackenzie, U. S. N. This memoir of one of the brightest ornaments of the American navy, is written by one who was a personal friend of the commodore, and a participator in some of the scenes he describes. He has portrayed the character and services of that good man, with a free and glowing pencil but characterized with all the hues of truth. He has set up a model for the scions of our navy, after which it will be well for them to pattern, if they would be truly the "guardians of their country's honor."

"In his private character," says the author, "Perry was a model of every domestic virtue and grace; an affectionate and devoted husband, a fond father, and a faithful and generous friend." Decatur, when first informed of the death of Perry, was greatly affected; and after a short pause he remarked to Mr. Handy, who communicated the news to him, "Sir! the American navy has lost its brightest ornament!"

Number CXXVIII. *The Life and Adventures of Bruce*, by Sir Francis Bond Head. The published narrative of the extraordinary adventures of this celebrated African traveller, was long ungenerously deemed untrue, and the author descended to the grave with the unjust imputation of giving to fiction the credit of truth, and of attempting to win a name by false statements. But so fully have subsequent travellers corroborated the truth of his narrative, that entire credence is now given to his writings, and the meed of praise, withheld while he was living, is now liberally awarded. The volume before us is written in a familiar, lively, and agreeable style, and contains whatever is most interesting in the larger work of Bruce. The author is the late governor of Upper Canada.

Number CXXIX. *Lives of Jay and Hamilton.* The first memoir is written by a son of Professor Renwick, and the latter by the Professor himself. The names of Jay and Hamilton are incorporated with some of the most interesting portions of our history—the former, as a statesman and a jurist, and the latter, as a statesman and a soldier. A complete biography of the former has been published, in two large volumes, and two volumes of that of the latter have appeared. The little volume before us comprehends in brief the important matter contained in the others.

Stories by Miss Sedgwick. We have not had time to examine the contents of this little volume, but the name of the authoress is a sufficient guarantee for the excellence of the book. It contains twelve stories, dedicated to "Lucy, Lizzie, Martha, Eliza, Bessie, Louisa, Sarah, Alice, and Jenny." We commend it to the young.

Presidents' Messages, from Washington to Harrison, complete. A new and elegant octavo edition, 750 pp. carefully revised and corrected by the best authorities, with a portrait of Gen. Harrison and a non-political sketch of his life. NEW YORK, E. Walker: D. Appleton & Co: and Collins, Keese, & Co:—BOSTON, Little & Brown:—PHILADELPHIA, Thomas Cowperthwait & Co.

The value of this publication must be apparent to every American who takes the slightest interest in his country's history—and we are more than pleased that the work has found a publisher with enterprise enough to issue it in a style equal to any work of the kind ever issued from the American press. We predict for it an extensive sale.